

SEQUENCE LISTING

<110> Wright, David A.
Voytas, Daniel F.

<120> Plant Retroelements and Methods Related Thereto

<130> P-1065A

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<150> 60/087125

<151> 1998-05-29

<150> 09/322478

<151> 1999-05-28

<160> 165

<170> PatentIn Ver. 2.1

<210> 1

<211> 18

<212> DNA

<213> Glycine max

<400> 1

tggcgccggtt gccaatg

18

<210> 2

<211> 18

<212> DNA

<213> Glycine max

<400> 2

tggcgccggtt gtcgggga

18

<210> 3

<211> 6

<212> DNA

<213> Glycine max

<400> 3

ttgggg

6

<210> 4
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: plant
 retroelement sequence

<400> 4
 Met Ala Ser Arg Lys Arg Lys
 1 5

<210> 5
 <211> 1263
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: plant
 retroelement sequence

<400> 5
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 ctccagaggc tcagatggga ccaggttctg acccgacttc cagagaagtg gattgatgtt 240
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 cctccagacc atgatgccat cctttccgct ctgtgtactc cagggggacg atttgttctg 480
 aatgttgata gtgccccctg gaagctgctg cggaaggatc tgatgacgct cgcgcagaca 540
 tggagtgtgc tctcttattt taaccttgca ctgacttttc acacttctga tattaatgtt 600
 gacagggccc gactcaatta tggcttggtg atgaagatgg acctggacgt gggcagcctc 660
 atttctcttc agatcagtca gatcgcccag tccatcactt ccaggcttgg gttcccagcg 720
 ttgatcacia cactgtgtga gattcagggg gttgtctctg atacctgat ttttgagtca 780
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 tga 1263

<210> 6
 <211> 421
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: plant
 retroelement sequence

<400> 6
 Met Ala Ser Arg Lys Arg Lys Ala Val Pro Thr Pro Gly Glu Ala Ser
 1 5 10 15
 Asn Trp Asp Ser Ser Arg Phe Thr Phe Glu Ile Ala Trp His Arg Tyr
 20 25 30
 Gln Asp Ser Ile Gln Leu Arg Asn Ile Leu Pro Glu Arg Asn Val Glu
 35 40 45
 Leu Gly Pro Gly Met Phe Asp Glu Phe Leu Gln Glu Leu Gln Arg Leu
 50 55 60
 Arg Trp Asp Gln Val Leu Thr Arg Leu Pro Glu Lys Trp Ile Asp Val
 65 70 75 80
 Ala Leu Val Lys Glu Phe Tyr Ser Asn Leu Tyr Asp Pro Glu Asp His
 85 90 95
 Ser Pro Lys Phe Trp Ser Val Arg Gly Gln Val Val Arg Phe Asp Ala
 100 105 110
 Glu Thr Ile Asn Asp Phe Leu Asp Thr Pro Val Ile Leu Ala Glu Gly
 115 120 125
 Glu Asp Tyr Pro Ala Tyr Ser Gln Tyr Leu Ser Thr Pro Pro Asp His
 130 135 140
 Asp Ala Ile Leu Ser Ala Leu Cys Thr Pro Gly Gly Arg Phe Val Leu
 145 150 155 160
 Asn Val Asp Ser Ala Pro Trp Lys Leu Leu Arg Lys Asp Leu Met Thr
 165 170 175
 Leu Ala Gln Thr Trp Ser Val Leu Ser Tyr Phe Asn Leu Ala Leu Thr
 180 185 190
 Phe His Thr Ser Asp Ile Asn Val Asp Arg Ala Arg Leu Asn Tyr Gly

195	200	205
Leu Val Met Lys Met Asp	Leu Asp Val Gly Ser	Leu Ile Ser Leu Gln
210	215	220
Ile Ser Gln Ile Ala Gln Ser	Ile Thr Ser Arg	Leu Gly Phe Pro Ala
225	230	235 240
Leu Ile Thr Thr Leu Cys Glu	Ile Gln Gly Val Val Ser	Asp Thr Leu
245	250	255
Ile Phe Glu Ser Leu Ser Pro	Val Ile Asn Leu Ala Tyr	Ile Lys Lys
260	265	270
Asn Cys Trp Asn Pro Ala Asp	Pro Ser Ile Thr Phe	Gln Gly Thr Arg
275	280	285
Arg Thr Arg Thr Arg Ala Ser	Ala Ser Ala Ser Glu	Ala Pro Leu Pro
290	295	300
Ser Gln His Pro Ser Gln Pro	Phe Ser Gln Arg Pro	Arg Pro Pro Leu
305	310	315 320
Leu Ser Thr Ser Ala Pro Pro	Tyr Met His Gly Gln Met	Leu Arg Ser
325	330	335
Leu Tyr Gln Gly Gln Gln Ile	Ile Ile Gln Asn Leu Tyr	Arg Leu Ser
340	345	350
Leu His Leu Gln Met Asp Leu	Pro Leu Met Thr Pro	Glu Ala Tyr Arg
355	360	365
Gln Gln Val Ala Lys Leu Gly	Asp Gln Pro Ser Thr	Asp Arg Gly Glu
370	375	380
Glu Pro Ser Gly Ala Ala Ala	Thr Glu Asp Pro Ala	Val Asp Glu Asp
385	390	395 400
Leu Ile Ala Asp Leu Ala Gly	Ala Asp Trp Ser Pro	Trp Ala Asp Leu
405	410	415
Gly Arg Gly Ser Glx		
420		

<210> 7
 <211> 1596
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 7

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tgTCggcgta acaacgctgc aagaagaaga agggagcaag acatagaagg aagtagttac 120
acctcacctc ctCcttctcc aaattatgct cagatggacg gggaaCCggc acaaagagtc 180
acactagagg acttctctaa taccaccact cctcagttct ttacaagtat cacaaggccg 240
gaagtccaag cagatctcct tactcaaggG aacctcttcc atgggtcttcc aaatgaagat 300
ccatatgcgc atctagcctc atacatagag atatgcagca ccgttaaaat cgccggagtt 360
ccaaaagatg cgatactcct taacctcttt tCcttttccc tagcaggaga ggcaaaaaga 420
tggttgcact cctttaaagg caatagctta agaacatggg aagaagtagt ggaaaaattc 480
ttaaagaagt atttcccaga gtcaaagacc gtcgaacgaa agatggagat ttcttatttc 540
catcaatttc tggatgaatc ccttagcgaa gcactagacc atttccacgg attgctaaga 600
aaaacaccaa cacacagata cagcgagcca gtacaactaa acatattcat cgatgacttg 660
caactcttaa tcgaaacagc tactagaggG aagatcaagc tgaagactcc cgaagaagcg 720
atggagctcg tcgagaacat ggcggctagc gatcaagcaa tccttcatga tcacacttat 780
gttcccacaa aaagaagcct cttggagctt agcacgcagg acgcaacttt ggtacaaaac 840
aagctgttga cgaggcagat agaagccctc atcgaaaccc tcagcaagct gcctcaacaa 900
ttacaagcga taagtctctc ccactcttct gttttgcagg tagaagaatg ccccatatgc 960
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ttcaatcaag gggcaacaag atttaatcac gagccaccgg ggtttaatca aggaagaaac 1140
ttcatgcaag gctcaagttg gacgaataaa ggaaatcaat ataaggagca aaggaaccaa 1200
ccaccatacc agccaccata ccagcaccct agccaaggtc cgaatcagca agaaaagccc 1260
acaaaaatag aggaactgct gctgcaattc atcaaggaga caagatcaca tcaaaagagc 1320
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gaacggccca ctagaacttt cggtgctaac atggagagaa gaacccaag gaaggataaa 1440
gcagtactga ctagaggGca gagaagagcg caggaggagg gtaaggttga aggagaagac 1500
tgGCCagaag aaggaaggac agagaagaca gaagaagaag agaaggTggc agaagaacct 1560
aagcgtaCca agagccagag agcaaggGaa gccaag 1596
```

<210> 8

<211> 532

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 8

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Met Arg Gly Arg Thr Ala Ser Gly Asp Val Val Pro Ile Asn Leu Glu
  1                      5                      10                     15
```

Ile Glu Ala Thr Cys Arg Arg Asn Asn Ala Ala Arg Arg Arg Arg Glu
 20 25 30
 Gln Asp Ile Glu Gly Ser Ser Tyr Thr Ser Pro Pro Pro Ser Pro Asn
 35 40 45
 Tyr Ala Gln Met Asp Gly Glu Pro Ala Gln Arg Val Thr Leu Glu Asp
 50 55 60
 Phe Ser Asn Thr Thr Thr Pro Gln Phe Phe Thr Ser Ile Thr Arg Pro
 65 70 75 80
 Glu Val Gln Ala Asp Leu Leu Thr Gln Gly Asn Leu Phe His Gly Leu
 85 90 95
 Pro Asn Glu Asp Pro Tyr Ala His Leu Ala Ser Tyr Ile Glu Ile Cys
 100 105 110
 Ser Thr Val Lys Ile Ala Gly Val Pro Lys Asp Ala Ile Leu Leu Asn
 115 120 125
 Leu Phe Ser Phe Ser Leu Ala Gly Glu Ala Lys Arg Trp Leu His Ser
 130 135 140
 Phe Lys Gly Asn Ser Leu Arg Thr Trp Glu Glu Val Val Glu Lys Phe
 145 150 155 160
 Leu Lys Lys Tyr Phe Pro Glu Ser Lys Thr Val Glu Arg Lys Met Glu
 165 170 175
 Ile Ser Tyr Phe His Gln Phe Leu Asp Glu Ser Leu Ser Glu Ala Leu
 180 185 190
 Asp His Phe His Gly Leu Leu Arg Lys Thr Pro Thr His Arg Tyr Ser
 195 200 205
 Glu Pro Val Gln Leu Asn Ile Phe Ile Asp Asp Leu Gln Leu Leu Ile
 210 215 220
 Glu Thr Ala Thr Arg Gly Lys Ile Lys Leu Lys Thr Pro Glu Glu Ala
 225 230 235 240
 Met Glu Leu Val Glu Asn Met Ala Ala Ser Asp Gln Ala Ile Leu His
 245 250 255
 Asp His Thr Tyr Val Pro Thr Lys Arg Ser Leu Leu Glu Leu Ser Thr
 260 265 270

Gln Asp Ala Thr Leu Val Gln Asn Lys Leu Leu Thr Arg Gln Ile Glu
 275 280 285

Ala Leu Ile Glu Thr Leu Ser Lys Leu Pro Gln Gln Leu Gln Ala Ile
 290 295 300

Ser Ser Ser His Ser Ser Val Leu Gln Val Glu Glu Cys Pro Thr Cys
 305 310 315 320

Arg Gly Thr His Glu Pro Gly Gln Cys Ala Ser Gln Gln Asp Pro Ser
 325 330 335

Arg Glu Val Asn Tyr Ile Gly Ile Leu Asn Arg Tyr Gly Phe Gln Gly
 340 345 350

Tyr Asn Gln Gly Asn Pro Ser Gly Phe Asn Gln Gly Ala Thr Arg Phe
 355 360 365

Asn His Glu Pro Pro Gly Phe Asn Gln Gly Arg Asn Phe Met Gln Gly
 370 375 380

Ser Ser Trp Thr Asn Lys Gly Asn Gln Tyr Lys Glu Gln Arg Asn Gln
 385 390 395 400

Pro Pro Tyr Gln Pro Pro Tyr Gln His Pro Ser Gln Gly Pro Asn Gln
 405 410 415

Gln Glu Lys Pro Thr Lys Ile Glu Glu Leu Leu Leu Gln Phe Ile Lys
 420 425 430

Glu Thr Arg Ser His Gln Lys Ser Thr Asp Ala Ala Ile Arg Asn Leu
 435 440 445

Glu Val Gln Met Gly Gln Leu Ala His Asp Lys Ala Glu Arg Pro Thr
 450 455 460

Arg Thr Phe Gly Ala Asn Met Glu Arg Arg Thr Pro Arg Lys Asp Lys
 465 470 475 480

Ala Val Leu Thr Arg Gly Gln Arg Arg Ala Gln Glu Glu Gly Lys Val
 485 490 495

Glu Gly Glu Asp Trp Pro Glu Glu Gly Arg Thr Glu Lys Thr Glu Glu
 500 505 510

Glu Glu Lys Val Ala Glu Glu Pro Lys Arg Thr Lys Ser Gln Arg Ala
 515 520 525

Arg Glu Ala Lys

530

<210> 9

<211> 603

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 9

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atcatggaag tagagatctt tgactgttgg ggcatagact tcatggggcc ttttccttcg 120
tcatacggga atgtctacat cttggtagct gtggattacg tctccaaatg ggtggaagcc 180
atagccacgc caaaggacga tgccagggtta gtgatcaaat ttctgaagaa gaacattttt 240
tcccgttttg gagtcccacg agccttgatt agtgataggg gaacgcactt ctgcaacaat 300
cagttgaaga aagtccctgga gcactataat gtccgacata aggtggccac accttatcac 360
cctcagacaa atggccaagc agaaatttct aacagggagc tcaagcgaat cctggaaaag 420
acagttgcat caacaagaaa ggattgggtcc ttgaagctcg atgatgctct ctgggcctat 480
aggacagcgt tcaagactcc catcggttta tcaccatttc agctagtgtg tgggaaggca 540
tgtcatttac cagtggagct ggagtacaaa gcatattggg ctctcaagtt gctcaacttt 600
gac 603
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<210> 10

<211> 201

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 10

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Cys Asp Lys Cys Gln Arg Thr Gly Gly Ile Ser Arg Arg Asn Glu Met
  1              5              10              15
```

```
Pro Leu Gln Asn Ile Met Glu Val Glu Ile Phe Asp Cys Trp Gly Ile
      20              25              30
```

```
Asp Phe Met Gly Pro Phe Pro Ser Ser Tyr Gly Asn Val Tyr Ile Leu
      35              40              45
```

```
Val Ala Val Asp Tyr Val Ser Lys Trp Val Glu Ala Ile Ala Thr Pro
```


50	55	60
Lys Asp Asp Ala Arg Val Val Ile Lys Phe Leu Lys Lys Asn Ile Phe		
65	70	75 80
Ser Arg Phe Gly Val Pro Arg Ala Leu Ile Ser Asp Arg Gly Thr His		
	85	90 95
Phe Cys Asn Asn Gln Leu Lys Lys Val Leu Glu His Tyr Asn Val Arg		
	100	105 110
His Lys Val Ala Thr Pro Tyr His Pro Gln Thr Asn Gly Gln Ala Glu		
	115	120 125
Ile Ser Asn Arg Glu Leu Lys Arg Ile Leu Glu Lys Thr Val Ala Ser		
	130	135 140
Thr Arg Lys Asp Trp Ser Leu Lys Leu Asp Asp Ala Leu Trp Ala Tyr		
	145	150 155 160
Arg Thr Ala Phe Lys Thr Pro Ile Gly Leu Ser Pro Phe Gln Leu Val		
	165	170 175
Tyr Gly Lys Ala Cys His Leu Pro Val Glu Leu Glu Tyr Lys Ala Tyr		
	180	185 190
Trp Ala Leu Lys Leu Leu Asn Phe Asp		
	195	200

<210> 11

<211> 600

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 11

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ttggaggctg ggctcatata ccccatctct gacagcgctt gggtaagccc agtacagggtg 60
gttcccaaga aagggtggaat gacagtggta cgagatgaga ggaatgactt gataccaaca 120
cgaactgtca ctggttggcg aatgtgtatc gactatcgca agctgaatga agccacacgg 180
aaggaccatt tccccttacc tttcatggat cagatgctgg agagacttgc agggcaggca 240
tactactgtt tcttggtatg atactcggga tacaaccaga tcgcggtaga cccagagat 300
caggagaaga cggcctttac atgccccttt ggcgtctttg cttacagaag gatgccattc 360
gggttatgta atgcaccagc cacatttcag aggtgcatgc tggccatttt ttcagacatg 420
gtggagaaaa gcatcgaggt atttatggac gacttctcgg tttttggacc ctcatttgac 480

```

agctgtttga ggaacctaga gaggttactt cagaggtgcg aagagactaa cttggtactg 540
aattgggaaa agtgtcattt catggttcga gagggcatag tcctaggcca caagatctca 600

<210> 12

<211> 200

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 12

Leu Glu Ala Gly Leu Ile Tyr Pro Ile Ser Asp Ser Ala Trp Val Ser
1 5 10 15

Pro Val Gln Val Val Pro Lys Lys Gly Gly Met Thr Val Val Arg Asp
20 25 30

Glu Arg Asn Asp Leu Ile Pro Thr Arg Thr Val Thr Gly Trp Arg Met
35 40 45

Cys Ile Asp Tyr Arg Lys Leu Asn Glu Ala Thr Arg Lys Asp His Phe
50 55 60

Pro Leu Pro Phe Met Asp Gln Met Leu Glu Arg Leu Ala Gly Gln Ala
65 70 75 80

Tyr Tyr Cys Phe Leu Asp Gly Tyr Ser Gly Tyr Asn Gln Ile Ala Val
85 90 95

Asp Pro Arg Asp Gln Glu Lys Thr Ala Phe Thr Cys Pro Phe Gly Val
100 105 110

Phe Ala Tyr Arg Arg Met Pro Phe Gly Leu Cys Asn Ala Pro Ala Thr
115 120 125

Phe Gln Arg Cys Met Leu Ala Ile Phe Ser Asp Met Val Glu Lys Ser
130 135 140

Ile Glu Val Phe Met Asp Asp Phe Ser Val Phe Gly Pro Ser Phe Asp
145 150 155 160

Ser Cys Leu Arg Asn Leu Glu Arg Val Leu Gln Arg Cys Glu Glu Thr
165 170 175

Asn Leu Val Leu Asn Trp Glu Lys Cys His Phe Met Val Arg Glu Gly

180

185

190

Ile Val Leu Gly His Lys Ile Ser

195

200

<210> 13

<211> 858

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 13

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aaggaagaac cactagccct tccacaggat ctcccatatc ctatggcacc caccaagaag 60
aacaaggagc gttactttgc acgtttcttg gaaatattca aagggttaga aatcactatg 120
ccattcgggg aagcettaca gcagatgccc ctctactcca aatttatgaa agacatcctc 180
accaagaagg ggaagtatat tgacaacgag aatattgttg taggaggcaa ttgcagtgcg 240
ataatacaaa ggattctacc caagaagttt aaagaccccg gaagtgttac catcccgtgc 300
accattggga aggaagccgt aaacaaggcc ctcatgatac taggagcaag tatcaatctg 360
atgcccttgt caatgtgcaa aagaattggg aatttgaaga tagatccac caagatgacg 420
cttcaactgg cagaccgctc aatcacaagg ccatatgggg tggtagaaga tgcctggtc 480
aaggtagccc acttcacttt tccggtggac tttgttatca tggatatcga agaagacact 540
gagattcccc ttatcttagg cagacccttc atgctgactg ccaactgtgt ggtggatatg 600
gggaaaggga acttagagtt gactattgat aatcagaaga tcaccttga ccttatcaag 660
gcaatgaagt acccacagga gggttggaag tgcttcagaa tagaggagat tgataggaa 720
gatgtcagtt ttctcgagac accaaagact tcgctagaaa aagcaatggt aaatcattta 780
gactgtctaa ccagtgaaga ggaagaagat ctgaaggctt gcttggaaaa cttggatcaa 840
gaagacagta ttctgag                                     858

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<210> 14

<211> 286

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 14

Lys Glu Glu Pro Leu Ala Leu Pro Gln Asp Leu Pro Tyr Pro Met Ala

1

5

10

15

Pro Thr Lys Lys Asn Lys Glu Arg Tyr Phe Ala Arg Phe Leu Glu Ile

20

25

30

Phe Lys Gly Leu Glu Ile Thr Met Pro Phe Gly Glu Ala Leu Gln Gln
35 40 45
Met Pro Leu Tyr Ser Lys Phe Met Lys Asp Ile Leu Thr Lys Lys Gly
50 55 60
Lys Tyr Ile Asp Asn Glu Asn Ile Val Val Gly Gly Asn Cys Ser Ala
65 70 75 80
Ile Ile Gln Arg Ile Leu Pro Lys Lys Phe Lys Asp Pro Gly Ser Val
85 90 95
Thr Ile Pro Cys Thr Ile Gly Lys Glu Ala Val Asn Lys Ala Leu Ile
100 105 110
Asp Leu Gly Ala Ser Ile Asn Leu Met Pro Leu Ser Met Cys Lys Arg
115 120 125
Ile Gly Asn Leu Lys Ile Asp Pro Thr Lys Met Thr Leu Gln Leu Ala
130 135 140
Asp Arg Ser Ile Thr Arg Pro Tyr Gly Val Val Glu Asp Val Leu Val
145 150 155 160
Lys Val Arg His Phe Thr Phe Pro Val Asp Phe Val Ile Met Asp Ile
165 170 175
Glu Glu Asp Thr Glu Ile Pro Leu Ile Leu Gly Arg Pro Phe Met Leu
180 185 190
Thr Ala Asn Cys Val Val Asp Met Gly Lys Gly Asn Leu Glu Leu Thr
195 200 205
Ile Asp Asn Gln Lys Ile Thr Phe Asp Leu Ile Lys Ala Met Lys Tyr
210 215 220
Pro Gln Glu Gly Trp Lys Cys Phe Arg Ile Glu Glu Ile Asp Glu Glu
225 230 235 240
Asp Val Ser Phe Leu Glu Thr Pro Lys Thr Ser Leu Glu Lys Ala Met
245 250 255
Val Asn His Leu Asp Cys Leu Thr Ser Glu Glu Glu Glu Asp Leu Lys
260 265 270
Ala Cys Leu Glu Asn Leu Asp Gln Glu Asp Ser Ile Pro Glu
275 280 285

<210> 15
<211> 192
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 15
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gacaaggatatt ttcacgccat ctattatgct agcaagggtcc tgaatgaagc acagttgaat 120
tatgcaacca cagaaaagga gatgctagcc attgtctttg ccttgagagaa gttcagggtca 180
tacttgatag gg 192

<210> 16
<211> 64
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 16
Phe Glu Leu Met Cys Asp Ala Ser Asp Tyr Ala Val Gly Ala Val Leu
1 5 10 15
Gly Gln Arg Lys Asp Lys Val Phe His Ala Ile Tyr Tyr Ala Ser Lys
20 25 30
Val Leu Asn Glu Ala Gln Leu Asn Tyr Ala Thr Thr Glu Lys Glu Met
35 40 45
Leu Ala Ile Val Phe Ala Leu Glu Lys Phe Arg Ser Tyr Leu Ile Gly
50 55 60

<210> 17
<211> 12286
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: plant
retroelement sequence

<400> 17

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tgataactgc taaataattg tgaattaata gtagaaaatt agtcaaattt tggcttaaaa 60
ttaattatatt agcagttatt tgtgattaaa agttagaaaa gcaattaagt tgaatttttg 120
gccatagata tgaaaactga aggtacaaca agcaaaaggc agcagaaagt gaagaaaaag 180
aataaaatct gaagcagacc cagccaaca cgcgccctta gcgcgcgtca cgcgctaagc 240
ttgcaaggca gcacaggcac taagcgaggc gttaagcacg aagatgcagg attcgttacg 300
tgcgctaagc gcgaggcaca cgctaagcgc gcgatccaac agaagcacac gctaagcctg 360
cagcatgcgc taagcgcgcc tacgaaggcc caaagcccat ttctacacct ataaatagag 420
atccaagcca agggagaatg tacaccttgc ctgagagcac ttctctcagc attccaagct 480
tgagctctcc cttttctctc tatattcttt gcttttatta tccattcttt ctttcacccc 540
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aggttttatg ttctaattct ttccctttta tcttgcatth atgtcttaaa tttctgttgg 720
gtttttattcg ctcgggagag ggtatttctt aataaggggt taagaagtaa tgcattgcac 780
agtttttaggg gttatacgct tggtaaaggg taacacctaa tagaacaat taagaaaagg 840
atcgctcgggc tagcattgct aggcatagaa tgatggccca atgcccatgc atttagcaac 900
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ttcttttctt ggctcattct tttattattc tttactttac tttttcttct atcctttctt 1440
tcttctccca taaattgcac gggtagtgcc tttttgtttt tatgcgaggc agaactgcat 1500
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retroelement sequence

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Phe Ser Asn Thr Thr Thr Pro Gln Phe Phe Thr Ser Ile Thr Arg Pro
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Glu Val Gln Ala Asp Leu Leu Thr Gln Gly Asn Leu Phe His Gly Leu
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Pro Asn Glu Asp Pro Tyr Ala His Leu Ala Ser Tyr Ile Glu Ile Cys
100 105 110

Ser Thr Val Lys Ile Ala Gly Val Pro Lys Asp Ala Ile Leu Leu Asn
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Asp His Phe His Gly Leu Leu Arg Lys Thr Pro Thr His Arg Tyr Ser
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Glu Pro Val Gln Leu Asn Ile Phe Ile Asp Asp Leu Gln Leu Leu Ile
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Leu Gln Leu Ala Asp Arg Ser Ile Thr Arg Pro Tyr Gly Val Val Glu			
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<210> 24

<211> 1857

<212> DNA

<213> Arabidopsis thaliana

<400> 24

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gagatagccc	gaggaaagag	agcgatgaga	gagaggtatg	agcttataga	cgaagatctg	180
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atacaattcc	tctccacact	acaagtagag	ctctaccaag	gtatgacctc	tgatgagttg	480
gattgtgaag	gattgggatt	cttgcgattt	tctgtgtatg	gtcatgagta	caggttatca	540
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gaaagagaag	agttgaaaga	cttgtggatc	accatcggca	gctctgtacc	gttgaatgct	660
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agagctgatg	aggctcgagta	cccattctgt	ggagctgata	cagaacaagg	aggttcgtct	1800
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<210> 25

<211> 1254

<212> DNA

<213> Pisum sativum

<400> 25

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cgtacattcg	ccgggctgat	taacagcaaa	aagtgggacc	ggttaatata	ccccttgaag	240
cattacgaca	tcgcaacagt	gcgtgagttc	tacgcgaacg	cactgccgaa	cgacgacgag	300
ccattcacat	ggacgtctag	agtgtccggc	cgtcctgttg	cgttcgatcg	ggatgcaatt	360
aaccgtgtcc	tgggtgaacc	gctccatctg	ggagccaatg	agagagacac	ttaccaccaa	420
gatttaaggc	ttcaccggga	taccgattcg	atttctactg	ccctgctttt	ggaagggaaa	480
tcagttgagc	tgaacccatc	tggggttccg	atgagatacc	atagggagga	catgattccc	540
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accgtgccga	tcccagtggc	acatttggtg	cacatcatcc	tcacgaatat	ccagattgat	660
gtggcaaggga	ttattgcttt	ggagttgaag	tccgtgattg	aaagcgggct	aaagtcgggg	720
gaacgagtga	attgtcccct	tgctttccct	tgtctaatac	tggctttgtg	ccaacaagcg	780

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```

<210> 26

<211> 564

<212> DNA

<213> *Arabidopsis thaliana*

<400> 26

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atcttggaag ttgagatctt tgatgtatgg gggattgatt ttatgggtcc attcccatct 120
tcatacggta ataaatatat actggtcgcc gtagactacg tatcaaagtg ggtcgaagct 180
attgctagtc ctaccaacga tgcaaaagtt gtgctgaagt tgttcaaaac cataatcttc 240
ccaagatttg gagttcccag ggtagtaatc agtgatggcg gaaagcattt catcaacaag 300
gtttttgaga acctcttgaa gaagcatggg gtaaagcagg ttgagatctc caataggagg 360
ataaaaacaa ttctggaaaa gactgttggg attacaagga aagactggtc tgcaaaagcta 420
gatgatgcat tatgggctta caggacagct ttcaagacc ccataggtag aactcctttc 480
aatcttctct atggaaaatt atgtcatcta cccgttgagc tcgagtacaa agcaatgtgg 540
gcggtaaaac ttctgaactt tgac 564

```

<210> 27

<211> 180

<212> DNA

<213> *Arabidopsis thaliana*

<400> 27

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atcgaggaga tgggtggagg tttcatggac gatttttcgg tctatggccc ctctttctcc 60
tcatgtttgt tgaatcttgg cagggtattg actagggtgc aagagacgaa tcttggtctc 120
aattgggaaa agtgtcattt catggtgaag gaaggcatag tattggacca caagatatca 180

```

<210> 28

<211> 192

<212> DNA

<213> *Arabidopsis thaliana*

<400> 28

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tttgaaatca tgtgtgatgc atcagattac gcagtaggag ctgttctagg ccagaaaata 60
gacaagaagc ttcattgcat atattacgcc agccgaacgt tggatgacgc tcagggaaga 120
tatgcaacaa ctgagaagga gcttctagct gttgtattcg catttgagaa gttcagaagc 180

```

tatttggttg ga

192

<210> 29

<211> 597

<212> DNA

<213> Pisum sativum

<400> 29

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ttggatgcga gaatgattta cccgatctcg gatagtccat gggtcagtcc cgtgcatgtg 60
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aaagttgcaa cggggtggag aatgtgtatt gaatatagga ggttgaatac cgcaactcga 180
aaggaccatt ttccactccc gtccatggat caaatgctgg aaagactctc cgggcaacaa 240
tactattgtt tcttgatgg ctattccggg tataaccaa ttgccgttga cccggccgat 300
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gggttgtgca atgcaccgac gactttccaa cgatgtgtgc aagccatttt tgccgacctt 420
aatgagaaaa caatggaagt cttcatggat gacttctcgg tatttggtgt atcctttagt 480
ttatgcttgg caaacttgaa aacggtgctt gaaagatgtg tgaagaccaa tcttgtgctt 540
aattggtaga agtgccactt catggtgacc gaggggatag tgcttggcca taaagtc 597
```

<210> 30

<211> 192

<212> DNA

<213> Pisum sativum

<400> 30

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tttgagctaa tgttgtatgc gagcaactat gcaatcggag cggatttagg ccaaagaaaa 60
gagaaaaaat ttcatgcgat acattacgca agtaaagttc ttaatgagga tcaaattaac 120
tatgccacca ctgaaaaaga attacttgcg atagtgtatg cacttgaaaa gtttaggtct 180
tatcttatag gg 192
```

<210> 31

<211> 581

<212> DNA

<213> Pisum sativum

<400> 31

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atccaagagg tgaagtatt tgattgttgg ggcacgatt ttgtaggacc attccccct 120
cttatggtaa cgagtatatg cttgtcgcag ttgagggcat tgcctcacct cgggaggatg 180
cgaaaacggg aataattttt ttgaagaaaa acatattttc ccgtttcgga acccccagag 240
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ttgggctcac tccttttcaa ttggtgtttg gtaaaacttg ccatttgccg gtcgaattgg 540
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agcacaaagc cttgtgggct ttgaaaatta ataattttga a

581

<210> 32

<211> 1362

<212> DNA

<213> Glycine max

<400> 32

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tcacgtttca ctttcgagat tgcttggcac agataccagg atagcattca gctccggaac 120
atccttccag agaggaatgt agagcttggg ccagggatgt ttgatgagtt cctgcaggaa 180
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cctccagacc atgatgccat cctttccgct ctgtgtactc cagggggacg atttgttctg 480
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tgatcttatg ctttaatgtt ttcttttata ttatgtttgt gttctctttt atgttttatg 1320
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```

<210> 33

<211> 192

<212> DNA

<213> Glycine max

<400> 33

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ggcaaaatct ttcattgctat ctactacgcc agcaagttt taaatgatgc acaggttaac 120
tatgctacca cagaaaaaga aatgttggca attgtttatg cacttgaaaa gttcaaactc 180
tatttggtag gc 192
```

<210> 34

<211> 597

<212> DNA

<213> Glycine max

<400> 34

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gttcccaaga aagggtggaat gacagtggta caaaatgaga ggaatgactt gataccaaca 120
cgaacagtca ctggctggcg aatgtgtatt gactatcaca agctgaatga agctacacgg 180
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agctgtttga ggaacctaga aatgggtactt cagaggtgcg tagagactaa cttgggtactg 540
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<210> 35

<211> 603

<212> DNA

<213> Glycine max

<400> 35

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tcatacagga atgtctacat cttggttagct gtggattacg tctccaaatg ggtggaagcc 180
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aggacagcgt tcaagactcc catcggttta tcaccatttc agctagtata tgggaaggca 540
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gac 603
```

<210> 36

<211> 150

<212> DNA

<213> Glycine max

<400> 36

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cctaaaatac tacaacgaca tgattggtgt tttaggataa ttgactgaaa aacctattat 60
caatttggcg ccgttgccaa ttgggtgttt gtttgttaca tttgagattt cagacttgct 120
tagatcaagt tctttttcaa ttttcttttt 150
```

<210> 37

<211> 11

<212> DNA
<213> Glycine max

<400> 37
tggcgccggtt g 11

<210> 38
<211> 15
<212> DNA
<213> Glycine max

<400> 38
tggcgccggtt gccgg 15

<210> 39
<211> 27
<212> DNA
<213> Glycine max

<400> 39
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<210> 40
<211> 9
<212> DNA
<213> Glycine max

<400> 40
tttggggga 9

<210> 41
<211> 16
<212> DNA
<213> Glycine max

<400> 41
tttaatttgg gggatt 16

<210> 42
<211> 775
<212> DNA
<213> Nicotiana tabacum

<400> 42

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cggtggtcac caatgagaag aatgagttga ttcctacaag aatggtgacc ggttggagag 180
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tttcttaggc cacgcggggg tttaccaatt cttcataaaa gatttcacaa aggtt 775
```

<210> 43

<211> 259

<212> PRT

<213> Nicotiana tabacum

<400> 43

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  1             5             10            15
```

```
Gly Val Ile Tyr Pro Ile Tyr Asp Ser Ser Glx Thr Ser Pro Val Gln
          20           25           30
```

```
Cys Val Pro Lys Lys Gly Gly Met Thr Val Val Thr Asn Glu Lys Asn
          35           40           45
```

```
Glu Leu Ile Pro Thr Arg Met Val Thr Gly Trp Arg Val Cys Met Asp
          50           55           60
```

```
Tyr Arg Lys Leu Asn Lys Leu Thr Arg Lys Asp His Phe Pro Phe Pro
          65           70           75           80
```

```
Phe Leu Asp Gln Met Leu Asp Arg Leu Ala Cys Arg Ala Phe Tyr Cys
          85           90           95
```

```
Phe Leu Asp Val Glx Ser Gly Tyr Ser Gln Ile Phe Ile Ala Pro Glx
          100          105          110
```

```
Asp His Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Tyr
          115          120          125
```

```
Lys Arg Met Pro Phe Gly Leu Cys Asn Ala Leu Ala Asn Phe Tyr Arg
          130          135          140
```

Cys Met Met Ala Ile Phe Thr Asp Met Val Lys Asp Tyr Leu Lys Val
 145 150 155 160

Phe Met Asp Asp Phe Ser Met Val Gly Asp Ser Phe Asp Asp Cys Leu
 165 170 175

Glu Asn Leu Asp Lys Val Leu Ala Arg Tyr Glu Glu Thr Asn Leu Val
 180 185 190

Leu Asn Trp Glu Lys Cys His Phe Met Ile Glu Glu Gly Ile Val Leu
 195 200 205

Gly His Lys Ile Ser Asn Asn Gly Ile Glu Val Asp Lys Ala Lys Ile
 210 215 220

Lys Val Ile Ser Lys Leu Thr Pro Pro Thr Leu Val Lys Gly Val Arg
 225 230 235 240

Ser Phe Leu Gly His Ala Gly Phe Tyr Gln Phe Phe Ile Lys Asp Phe
 245 250 255

Thr Lys Val

<210> 44
 <211> 761
 <212> DNA
 <213> Nicotiana tabacum

<400> 44
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 tccaaaaatg agttgattcc gacaagaacc atcaccggtt ggagggtatg catggactac 180
 cgcaagttga ataaagtgaac ctgcaaggat cactttcctt tgccatttct ggatcagatg 240
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 atcaatctct ggcataaaat ttcaaaacat ggcattgagg tggataaaca aagatagatg 660
 tgatttcaag gctccctccc cctacatccg tcaaggaggt ccgatgtttt cttgggcatg 720
 cggggttcta ttggagattc ataaaagact tctccaaggt t 761

<210> 45

<211> 254

<212> PRT

<213> Nicotiana tabacum

<400> 45

Val Arg Lys Glu Val Val Lys Leu Leu Asp Val Gly Val Val Tyr Pro
1 5 10 15

Ile Ser Asp Ser Ser Trp Thr Ser Pro Val Gln Cys Val Pro Lys Lys
20 25 30

Val Gly Met Thr Val Val Lys Asn Ser Lys Asn Glu Leu Ile Pro Thr
35 40 45

Arg Thr Ile Thr Gly Trp Arg Val Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60

Lys Val Thr Cys Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met
65 70 75 80

Leu Asp Arg Leu Ala Gly Arg Ala Phe Tyr Cys Phe Leu Asp Glu Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Leu Ile Ala Pro Glu Asp Pro Glu Lys Thr
100 105 110

Thr Phe Thr Cys Pro Tyr Gly Thr Phe Val Phe Ser Arg Met Pro Phe
115 120 125

Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
130 135 140

Phe Ser Tyr Met Val Lys Asp Ile Phe Glu Val Phe Met Asp Asp Phe
145 150 155 160

Ser Val Val Gly His Ser Phe Asp Glu Cys Leu Lys Asn Leu Asp Arg
165 170 175

Val Leu Ala His Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Glu Glu Gly Ile Asn Leu Trp His Lys Ile Ser
195 200 205

Lys His Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Ser Arg
210 215 220

Leu Pro Pro Pro Thr Ser Val Lys Gly Val Arg Cys Phe Leu Gly His

225

230

235

240

Ala Gly Phe Tyr Trp Arg Phe Ile Lys Asp Phe Ser Lys Val

245

250

<210> 46

<211> 762

<212> DNA

<213> Nicotiana tabacum

<400> 46

gtgCGtaagg aggtgTtttaa gttgtTggat gttggggTtg tgtaccccat ctctgatagc 60
 tcttgCattt cgcCGgtgca atgtgtaccg aagaagggTg gcatgaccgt ggttgCaaat 120
 tcgCaaaatg ggttgattcc taccaggatc gtcacCGggt ggaaggtatg catggattac 180
 cgaaggtTga ataaagtGac ccgcaaggat cactttccat tgccttttct tgatcagatg 240
 ttagatcgac ttgctgggCG tgccttctac tgtttctTgg atgggtattc tggatacaac 300
 caaatcttca ttactccgga agatcaggag aagacaacat tcacttgTcc atatggcacc 360
 tttgcttttt ctaggatgcc ttttgggTtg tgtaatgcac cgactacatt ctagcggtat 420
 atgatggcca ttttcaactga tatggtggaa gatattttTg aggtgttcat ggacgacttt 480
 agtgtTgtgg gtgattcatt tgatgaatgt ttgaataatc ttgatagagt gttggcccat 540
 tgtaaagaaa ccaatctTgt tcttaattgg gagaaatgcc acttcatggt tgaggagggc 600
 atagtTcttg ggcataaaat tttaaagcat ggtatagagg tggacaaagc aaaaattgat 660
 gtgatttcaa ggctccctcc ccctacttct gtcaagggag tgagaagttt tcttaggcat 720
 gcggggTtct accggagatt catcaaagat ttcaccaaag tt 762

<210> 47

<211> 254

<212> PRT

<213> Nicotiana tabacum

<400> 47

Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Val Val Tyr Pro
 1 5 10 15

Ile Ser Asp Ser Ser Cys Ile Ser Pro Val Gln Cys Val Pro Lys Lys
 20 25 30

Gly Gly Met Thr Val Val Ala Asn Ser Gln Asn Gly Leu Ile Pro Thr
 35 40 45

Arg Ile Val Thr Gly Trp Lys Val Cys Met Asp Tyr Arg Lys Leu Asn
 50 55 60

Lys Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met
 65 70 75 80

Leu Asp Arg Leu Ala Gly Arg Ala Phe Tyr Cys Phe Leu Asp Gly Tyr
 85 90 95
 Ser Gly Tyr Asn Gln Ile Phe Ile Thr Pro Glu Asp Gln Glu Lys Thr
 100 105 110
 Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Phe Ser Arg Met Pro Phe
 115 120 125
 Gly Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Tyr Met Met Ala Ile
 130 135 140
 Phe Thr Asp Met Val Glu Asp Ile Leu Glu Val Phe Met Asp Asp Phe
 145 150 155 160
 Ser Val Val Gly Asp Ser Phe Asp Glu Cys Leu Asn Asn Leu Asp Arg
 165 170 175
 Val Leu Ala His Cys Lys Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190
 Cys His Phe Met Val Glu Glu Gly Ile Val Leu Gly His Lys Ile Leu
 195 200 205
 Lys His Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Ser Arg
 210 215 220
 Leu Pro Pro Pro Thr Ser Val Lys Gly Val Arg Ser Phe Leu Arg His
 225 230 235 240
 Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 48

<211> 760

<212> DNA

<213> Nicotiana tabacum

<400> 48

gcggaaggag gtcgtcaagc tggtggatgt cgggtgtgtg taccocatat ttgatagctc 60
 ttggactttg ccggtgcaat atgtgccgaa gaaggggtgg atgaccgtgg ttaccaatgt 120
 aaaaaatgag ttgattccta ccaggactgt caccgggtgg aggggtgtgca tggattacca 180
 caaattgaat aaagtgaccc gcaaggatca ctttccatta ccttttcttg atcagatgtt 240
 agacagactt gctgggtgtg ccttctactg tttcttggat ggggtattctg ggtgcaacaa 300
 aattttgatt gcacaaaaag atcaggagaa gaccacctt acttgtaagt atggtacctt 360
 tgtcttttct aggatgtcat ttgggttgtg taatgcaccg actacattct agaggtgtat 420
 gatggccata ttacctaca tgggtggagga cattttggag gtgtttatgg atgacttcag 480

tgttggtggt gactagtttg atgaatgttt gaaaaatctt gatagagtgt tggcccgttg 540
 tgaagaagcc aaccttggtgc ttaattggga gaaatgccac ttcattggttg aggagggcat 600
 agtccttagc cataaaattt caaagcatgg tatagaggtg gacaaagcaa aaattgaagt 660
 gatttcaagg ctcttcccc ctacttctgt caagggagtt agaagttttc ttgggcatgc 720
 ggggttctac tggagattca tcaaagactt cacgaagggt 760

<210> 49

<211> 253

<212> PRT

<213> *Nicotiana tabacum*

<400> 49

Arg Lys Glu Val Val Lys Leu Leu Asp Val Gly Val Val Tyr Pro Ile
 1 5 10 15

Phe Asp Ser Ser Trp Thr Leu Pro Val Gln Tyr Val Pro Lys Lys Gly
 20 25 30

Gly Met Thr Val Val Thr Asn Val Lys Asn Glu Leu Ile Pro Thr Arg
 35 40 45

Thr Val Thr Gly Trp Arg Val Cys Met Asp Tyr His Lys Leu Asn Lys
 50 55 60

Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Leu Asp Gln Met Leu
 65 70 75 80

Asp Arg Leu Ala Gly Cys Ala Phe Tyr Cys Phe Leu Asp Gly Tyr Ser
 85 90 95

Gly Cys Asn Lys Ile Leu Ile Ala Pro Lys Asp Gln Glu Lys Thr Thr
 100 105 110

Phe Thr Cys Thr Tyr Gly Thr Phe Val Phe Ser Arg Met Ser Phe Gly
 115 120 125

Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Cys Met Met Ala Ile Phe
 130 135 140

Thr Tyr Met Val Glu Asp Ile Leu Glu Val Phe Met Asp Asp Phe Ser
 145 150 155 160

Val Val Gly Asp Glx Phe Asp Glu Cys Leu Lys Asn Leu Asp Arg Val
 165 170 175

Leu Ala Arg Cys Glu Glu Ala Asn Leu Val Leu Asn Trp Glu Lys Cys
 180 185 190

His Phe Met Val Glu Glu Gly Ile Val Leu Ser His Lys Ile Ser Lys
 195 200 205

His Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Ser Arg Leu
 210 215 220

Leu Pro Pro Thr Ser Val Lys Gly Val Arg Ser Phe Leu Gly His Ala
 225 230 235 240

Gly Phe Tyr Trp Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 50

<211> 762

<212> DNA

<213> Oryza sativa

<400> 50

gtgcgtaagg aggtgtttta gttcctgtat gccaggatta tttatctcgt accatacagc 60
 gagtgggtta gccagttca ggtcgtgcc aagaaggag gaatgacggc cgttgcaa 120
 gctcaaatg aactaatccc gcaacgaacc gtaaccgat ggagaatgtg catcgattac 180
 aggaaactta acaaggctac aaaaaaggat catttccgc tacccttcat tgatgaaatg 240
 ttggaacggc tggcaaatca ttccttcttc tgtttccttg atgggtattc aggatatcat 300
 caaattccca tccatccgga ggaccagagt aagactacgt tcacatgtcc atatggcacc 360
 tatgcgtatc gtaggatgcc ctttgactg tgcaacactc ctgcatcttt ccaaagggtg 420
 atgatgtcta ttttctcgga catgatcgag gatatcatgg aagtcttcat ggatgacttc 480
 tcggtctatg gaaagacttt gggtcattgt ctgcagaatc tagacaaagt cttacaacga 540
 tgccaagaaa aggacctagt gcttaactgg gaaaagtgcc atttcatggg ctgtgaaggg 600
 atagttcttg ggcacgagt gtccgaacga ggagtcgaag ttgatcgtgc taaaattgat 660
 gtgatagatc agcttctcc acccgtgaac atcaaaggaa tccgcagctt ctttggtcac 720
 gctggctttt atagaagggt catcaaggac ttcacaaaag tt 762

<210> 51

<211> 254

<212> PRT

<213> Oryza sativa

<400> 51

Val Arg Lys Glu Val Phe Lys Phe Leu Tyr Ala Arg Ile Ile Tyr Leu
 1 5 10 15

Val Pro Tyr Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
 20 25 30

Gly Gly Met Thr Ala Val Ala Asn Ala Gln Asn Glu Leu Ile Pro Gln

35	40	45
Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn		
50	55	60
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met		
65	70	75 80
Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr		
85	90	95
Ser Gly Tyr His Gln Ile Pro Ile His Pro Glu Asp Gln Ser Lys Thr		
100	105	110
Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Pro Phe		
115	120	125
Gly Leu Cys Asn Thr Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile		
130	135	140
Phe Ser Asp Met Ile Glu Asp Ile Met Glu Val Phe Met Asp Asp Phe		
145	150	155 160
Ser Val Tyr Gly Lys Thr Leu Gly His Cys Leu Gln Asn Leu Asp Lys		
165	170	175
Val Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys		
180	185	190
Cys His Phe Met Val Cys Glu Gly Ile Val Leu Gly His Arg Val Ser		
195	200	205
Glu Arg Gly Val Glu Val Asp Arg Ala Lys Ile Asp Val Ile Asp Gln		
210	215	220
Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Phe Gly His		
225	230	235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 52

<211> 761

<212> DNA

<213> Oryza sativa

<400> 52

gtgcgcaagg aggttttgaa attgctgcat gccaggatta tctatcccgt accatacagt 60
 gagaggggta gccaggtcca gggtgtgcc aagaaggag gaatggcggt cgttgcaa 120
 gtcagaatg aactaattac gcaacaaacc gtaaccgat ggaggatgtg tatcgattac 180
 aggaaactca acaaggctac aaaaaaggat catttcccgc tacccttcat tgttgaaatg 240
 ttggaacggc tggcaaatca ttccttcttt tgtttccttg atggatattt cggatatcat 300
 caaattccca tccatccgga ggactagagt aagactacgt tcacatgtcc atatggcacc 360
 tatgcgtatc ataggatgtc ctttggactg tgcaacgctc ctgcatcttt ccaaggtgta 420
 tgatgtctat tttctcggac atgatcgagg atatcatgga agtcttcatg gatgacttct 480
 cgggtctatg aaagactttc ggtcattgtc tgcaaaatct agacaaagtc ttacaacgat 540
 gccaaagaaa ggacctggtg cttaactggg aaaagtgaca tttcatggtc cgtgaaggga 600
 tagttcttgg gcatcgagtg ttcgaacaag gaatcgaagt tgatcatgct aaaattgatg 660
 tgatagatca gcttctcct cccgtgaaca tcaaaggat cgcagcttc ttgggtcatg 720
 tcggctttta tagaagggtc atcaaggact tcactaaagt t 761

<210> 53

<211> 254

<212> PRT

<213> Oryza sativa

<400> 53

Val	Arg	Lys	Glu	Val	Leu	Lys	Leu	Leu	His	Ala	Arg	Ile	Ile	Tyr	Pro
1				5					10					15	

Val	Pro	Tyr	Ser	Glu	Arg	Val	Ser	Pro	Val	Gln	Val	Val	Pro	Lys	Lys
			20					25					30		

Gly	Gly	Met	Ala	Val	Val	Ala	Asn	Ala	Gln	Asn	Glu	Leu	Ile	Thr	Gln
		35					40					45			

Gln	Thr	Val	Thr	Gly	Trp	Arg	Met	Cys	Ile	Asp	Tyr	Arg	Lys	Leu	Asn
	50					55					60				

Lys	Ala	Thr	Lys	Lys	Asp	His	Phe	Pro	Leu	Pro	Phe	Ile	Val	Glu	Met
65					70					75				80	

Leu	Glu	Arg	Leu	Ala	Asn	His	Ser	Phe	Phe	Cys	Phe	Leu	Asp	Gly	Tyr
			85						90					95	

Phe	Gly	Tyr	His	Gln	Ile	Pro	Ile	His	Pro	Glu	Asp	Glx	Ser	Lys	Thr
		100					105						110		

Thr	Phe	Thr	Cys	Pro	Tyr	Gly	Thr	Tyr	Ala	Tyr	His	Arg	Met	Ser	Phe
		115					120					125			

Gly	Leu	Cys	Asn	Ala	Pro	Ala	Ser	Phe	Gln	Arg	Cys	Met	Met	Ser	Ile
	130					135					140				

Phe Ser Asp Met Ile Glu Asp Ile Met Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Lys Thr Phe Gly His Cys Leu Gln Asn Leu Asp Lys
 165 170 175

Val Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys
 180 185 190

Glx His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Arg Val Phe
 195 200 205

Glu Gln Gly Ile Glu Val Asp His Ala Lys Ile Asp Val Ile Asp Gln
 210 215 220

Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 54

<211> 762

<212> DNA

<213> Oryza sativa

<400> 54

gtgcggaaag aggttttttaa gctcctgcat gccgggatta tttataccgt tccatgcagt 60
 gagtggttca gcacagtcca gggtgggccc aagatgggat gaatgacggt cgttgcaa 120
 gctcaaaata aacttatccc gcaaccaacc ataaccgat ggaggatgtg catagactac 180
 aggaaactca acaaggctac aaaagaggat cattttccgc tacccttcat tgatgaaatg 240
 ttggaacgga tgacaaatca ttccttcttc tgtttccttg atgggtattc cggatatcat 300
 caaattccca tccgtccaga ggaccagagt aagactacgt tcacatgtcc atatggcacc 360
 tatgcgtatc gtaggatgtc ctccggactg tgcaacgctc ctgcatcttt ccaaaggtgt 420
 atgttgtcta ttttctcgga catgatcgaa gatatcatga aagtcttcat ggatgacttc 480
 tcagtttatg gaaagacttt cggtcattgt ctgtagaatc tagacaaagt cttacaacga 540
 tgccaagaaa atgacctagt gtttaattgg gaaaagtgcc attttatggt ccgtgaaggg 600
 atagttcttg ggcacgagt atccgaatga ggaatcgaag ttgatcgtgc taaaatcgat 660
 gttatagatc aaattcgtcc tctgcgaat atcaaaggaa tccgcagctt cttgggacat 720
 gccggctttt atagaagggt cctcaaggac ttcacaaaag tt 762

<210> 55

<211> 254

<212> PRT

<213> Oryza sativa

<400> 55

Val Arg Lys Glu Val Phe Lys Leu Leu His Ala Gly Ile Ile Tyr Thr
1 5 10 15

Val Pro Cys Ser Glu Trp Val Ser Thr Val Gln Val Gly Pro Lys Met
20 25 30

Gly Glx Met Thr Val Val Ala Asn Ala Gln Asn Lys Leu Ile Pro Gln
35 40 45

Pro Thr Ile Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60

Lys Ala Thr Lys Glu Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65 70 75 80

Leu Glu Arg Met Thr Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
85 90 95

Ser Gly Tyr His Gln Ile Pro Ile Arg Pro Glu Asp Gln Ser Lys Thr
100 105 110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Leu Ser Ile
130 135 140

Phe Ser Asp Met Ile Glu Asp Ile Met Lys Val Phe Met Asp Asp Phe
145 150 155 160

Ser Val Tyr Gly Lys Thr Phe Gly His Cys Leu Glx Asn Leu Asp Lys
165 170 175

Val Leu Gln Arg Cys Gln Glu Asn Asp Leu Val Phe Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Arg Val Ser
195 200 205

Glu Glx Gly Ile Glu Val Asp Arg Ala Lys Ile Asp Val Ile Asp Gln
210 215 220

Ile Arg Pro Pro Ala Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Leu Lys Asp Phe Thr Lys Val
245 250

<210> 56
 <211> 762
 <212> DNA
 <213> Oryza sativa

<400> 56
 gtgcgtaagg aggtcttgaa gctcttgcat gccgagatta tttatcccgt accatataga 60
 gagtgggtta gcccgggtcta ggttatgccg aagaagggac gaatgacggt cattgcaa 120
 gctcaaaatg aacttattcc gcaacgaaca gtaaccgat ggaggatgtg catagattac 180
 atgaaactta acaaggctac gaaaaaggat ctttccac tacccttcat tgatgaaatg 240
 ttggaacggc tggcaaatca ttctttcttc cgtttccttg atgggtattc taggtatgat 300
 caaattccca tccatccgga ggaccaaagt aagactacgt tcacatgttc gtatgatacc 360
 tatgcttata gtaggatgtc cttcggactg tgcaacgctc ctgcatcttt ccaaagggtg 420
 atgatgtcta ttttctccga catgattaag gacattatgg aagtcttcat gcatgacttc 480
 tctatttatg gaaagacctc cggtcattgt ctacaaaatt tagacaaaat tttgcaacga 540
 tgccaagaga aggacctggg acttaattgg gaaaagtgtc atttcatggg ccgtgaaggg 600
 atagtcttta gtcacgcagt gtccgaataa ggaatcgaag ttgatcgtgc taaaaactat 660
 gtaatagatt agcttccttc tcctgtgaac attaagggga tccgcaattt tttgggacat 720
 gctggctttt atagaagggt catcaaagac ttcacaaagg tt 762

<210> 57
 <211> 254
 <212> PRT
 <213> Oryza sativa

<400> 57
 Val Arg Lys Glu Val Leu Lys Leu Leu His Ala Glu Ile Ile Tyr Pro
 1 5 10 15
 Val Pro Tyr Arg Glu Trp Val Ser Pro Val Glx Val Met Pro Lys Lys
 20 25 30
 Gly Arg Met Thr Val Ile Ala Asn Ala Gln Asn Glu Leu Ile Pro Gln
 35 40 45
 Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Met Lys Leu Asn
 50 55 60
 Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
 65 70 75 80
 Leu Glu Arg Leu Ala Asn His Ser Phe Phe Arg Phe Leu Asp Gly Tyr
 85 90 95
 Ser Arg Tyr Asp Gln Ile Pro Ile His Pro Glu Asp Gln Ser Lys Thr

100	105	110
Thr Phe Thr Cys Ser Tyr Asp Thr Tyr Ala Tyr Arg Arg Met Ser Phe		
115	120	125
Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile		
130	135	140
Phe Ser Asp Met Ile Lys Asp Ile Met Glu Val Phe Met His Asp Phe		
145	150	155
Ser Ile Tyr Gly Lys Thr Ser Gly His Cys Leu Gln Asn Leu Asp Lys		
165	170	175
Ile Leu Gln Arg Cys Gln Glu Lys Asp Leu Val Leu Asn Trp Glu Lys		
180	185	190
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Ser His Arg Val Ser		
195	200	205
Glu Glx Gly Ile Glu Val Asp Arg Ala Lys Asn Tyr Val Ile Asp Glx		
210	215	220
Leu Pro Ser Pro Val Asn Ile Lys Gly Ile Arg Asn Phe Leu Gly His		
225	230	235
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 58

<211> 762

<212> DNA

<213> Hordeum vulgare

<400> 58

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gtgcgcaagg aggttttagaa gttcctggaa gcaggtatca tctatcgtgt tgctcatagt 60
gattggttga gtcgggtgca ttgtgtccct aagaaggag gcattaccgt tgtcccta 120
gataaggatg aattgatccc acagaggact attactggct ataggatggg gattgatttt 180
aggaaattga ataaagccac taggaaagat cattaccctt tgccttttat cgaccaa 240
cgagaaaggc tgtctaaaca cacacacttc tgcttttctaa acggttattt tggtttctcc 300
caaataccag ttgcacaatc tgatcaggag aaaaccactt tcacctgcc ttttggtaca 360
tttgcttata gacgtatgac ttttggttta tgtaatgcac ctgcctcctt tcaaagatgt 420
atgatggcta tattccctga cttttgtgaa aagattgttg aggttttcat ggatgacttc 480
tccatttacg gatcttcctt tgatgattgc ctcagcaacc ttgatcgagt cttgcagaga 540
tgtaaagaca ccaatctttt cttgaattgg aagaagtgcc actttatggg taatgacggc 600
atcgtcttag gacataaatt ttctgaaaga ggtattgaag tcgataaggc taaggttgat 660
ggaatcgaga aaatgccata cccacagat atcaaaggga taagaagttt ccttggtcat 720

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gctggtttct atagaaggtt cataaaagac ttcactaagg tt

762

<210> 59

<211> 254

<212> PRT

<213> Hordeum vulgare

<400> 59

Val	Arg	Lys	Glu	Val	Glx	Lys	Phe	Leu	Glu	Ala	Gly	Ile	Ile	Tyr	Arg
1				5					10					15	

Val	Ala	His	Ser	Asp	Trp	Leu	Ser	Arg	Val	His	Cys	Val	Pro	Lys	Lys
			20					25						30	

Gly	Gly	Ile	Thr	Val	Val	Pro	Asn	Asp	Lys	Asp	Glu	Leu	Ile	Pro	Gln
		35					40					45			

Arg	Thr	Ile	Thr	Gly	Tyr	Arg	Met	Val	Ile	Asp	Phe	Arg	Lys	Leu	Asn
	50						55					60			

Lys	Ala	Thr	Arg	Lys	Asp	His	Tyr	Pro	Leu	Pro	Phe	Ile	Asp	Gln	Met
65					70					75					80

Arg	Glu	Arg	Leu	Ser	Lys	His	Thr	His	Phe	Cys	Phe	Leu	Asn	Gly	Tyr
				85					90					95	

Phe	Gly	Phe	Ser	Gln	Ile	Pro	Val	Ala	Gln	Ser	Asp	Gln	Glu	Lys	Thr
			100					105					110		

Thr	Phe	Thr	Cys	Pro	Phe	Gly	Thr	Phe	Ala	Tyr	Arg	Arg	Met	Thr	Phe
	115						120					125			

Gly	Leu	Cys	Asn	Ala	Pro	Ala	Ser	Phe	Gln	Arg	Cys	Met	Met	Ala	Ile
	130					135					140				

Phe	Pro	Asp	Phe	Cys	Glu	Lys	Ile	Val	Glu	Val	Phe	Met	Asp	Asp	Phe
145					150					155					160

Ser	Ile	Tyr	Gly	Ser	Ser	Phe	Asp	Asp	Cys	Leu	Ser	Asn	Leu	Asp	Arg
				165					170					175	

Val	Leu	Gln	Arg	Cys	Lys	Asp	Thr	Asn	Leu	Phe	Leu	Asn	Trp	Lys	Lys
			180					185					190		

Cys	His	Phe	Met	Val	Asn	Asp	Gly	Ile	Val	Leu	Gly	His	Lys	Phe	Ser
	195						200					205			

Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Gly Ile Glu Lys
 210 215 220

Met Pro Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 60
 <211> 762
 <212> DNA
 <213> Hordeum vulgare

<400> 60
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 gattgggtga gtccggtgca ttgcgtccct aagaagggat gcattaccgt tgccctaata 120
 gataaggatg aattgatccc acataggatt attactggct ataggatggg gatcgatttt 180
 agggaaatga ataaagccac taggaaagaa cattaccctt tgccttttag cgaccaaata 240
 ctagaaaggt tgtctaaaca cacacacttc tgctttctag acggttattc tagtttctcc 300
 caaatactag ttgcacaatc tgatcaggag aaaaccactt tcacctaccg gttcgggtacc 360
 tttgcttata gacgtatgcc ttttggctta tgtaatgcac ctgccacctt tcaaagatgt 420
 atgatggcta tattctctga cttttgtgaa aagtttgtcg aggttttcat ggatgacttt 480
 tccgtttacg gatcttcctt tgatgattgc ctcaacaacc ttgatcgggt cttgcagaga 540
 tgtaaagata ctaatcttgt cttgaattgg gagaagtgcc actttatggg taatgaaggc 600
 atcgtcttag gacataaaat ttccgaaaga ggtattgaat tcgataaggc taaggttggt 660
 gcaatcaaga aaatgccata cccacagat atcaaaggta taagaagttt cttggtccat 720
 gctggtttct atagaagggt catcaaggac tttacaaagg tt 762

<210> 61
 <211> 254
 <212> PRT
 <213> Hordeum vulgare

<400> 61
 Val Arg Lys Glu Val Leu Lys Phe Leu Glu Ala Gly Ile Ile Tyr Pro
 1 5 10 15
 Val Ala His Asn Asp Trp Val Ser Pro Val His Cys Val Pro Lys Lys
 20 25 30
 Gly Cys Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro His
 35 40 45
 Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Met Asn
 50 55 60

Lys Ala Thr Arg Lys Glu His Tyr Pro Leu Pro Phe Ser Asp Gln Met
 65 70 75 80
 Leu Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
 85 90 95
 Ser Ser Phe Ser Gln Ile Leu Val Ala Gln Ser Asp Gln Glu Lys Thr
 100 105 110
 Thr Phe Thr Tyr Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
 115 120 125
 Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
 130 135 140
 Phe Ser Asp Phe Cys Glu Lys Phe Val Glu Val Phe Met Asp Asp Phe
 145 150 155 160
 Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Asn Asn Leu Asp Arg
 165 170 175
 Val Leu Gln Arg Cys Lys Asp Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190
 Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
 195 200 205
 Glu Arg Gly Ile Glu Phe Asp Lys Ala Lys Val Gly Ala Ile Lys Lys
 210 215 220
 Met Pro Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Val His
 225 230 235 240
 Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 62

<211> 757

<212> DNA

<213> Hordeum vulgare

<400> 62

gaaaagaggt tgtgaagctc ctggatgaag gtattatcta tcatgttgct catagcgatt 60
 gggtagtcc ggtgcatagc gttcctaaga agggaggcat taccgttgct cctaatagata 120
 aggatgaatt gatccgcag aggattatca ctggctatag gatggatgac gatttcagga 180
 aactgaataa agccactagg aaagatcatt accctttgcc ttttatcgac catatgctag 240

aaaggttgct caaactcaca cacttctgct ttctagacgg ttattctagt ttctccaaa 300
 taccagttgc acaatctgat caggagaaaa ccactttcac ctgcccttc ggtaccttg 360
 cttatagacg tatgcctttt ggcttatgta atgcacctgc cacctttcaa agatgtatga 420
 tggctatatt ctctaacttt tgtgaaaata ttgtcgaggt tttcatggat gacttttccg 480
 tttacgggtc ttcttttgat gattgcctca gcaaccttga tcgagtctta cagagatgta 540
 aagacaccaa tcttgctctt aatggggaga agtgccactt tatgggtaat gaaggcatcg 600
 tcttaggaca taaaatttct gaaagaggta ttgaagtcga taaggctaag gttgatgcaa 660
 tcgacaaaat gccatacccc acagatatca aaggtataag aagtttcctt ggtcatgggt 720
 gtttctatag aaggtttatc aaagatttca caaaggt 757

<210> 63

<211> 251

<212> PRT

<213> Hordeum vulgare

<400> 63

Lys Glu Val Val Lys Leu Leu Asp Glu Gly Ile Ile Tyr His Val Ala
 1 5 10 15

His Ser Asp Trp Val Ser Pro Val His Ser Val Pro Lys Lys Gly Gly
 20 25 30

Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln Arg Ile
 35 40 45

Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn Lys Ala
 50 55 60

Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp His Met Leu Glu
 65 70 75 80

Arg Leu Ser Lys Leu Thr His Phe Cys Phe Leu Asp Gly Tyr Ser Ser
 85 90 95

Phe Ser Gln Ile Pro Val Ala Gln Ser Asp Gln Glu Lys Thr Thr Phe
 100 105 110

Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe Gly Leu
 115 120 125

Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile Phe Ser
 130 135 140

Asn Phe Cys Glu Asn Ile Val Glu Val Phe Met Asp Asp Phe Ser Val
 145 150 155 160

Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg Val Leu

165	170	175
Gln Arg Cys Lys Asp Thr Asn Leu Val Leu Asn Gly Glu Lys Cys His		
180	185	190
Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser Glu Arg		
195	200	205
Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Asp Lys Met Pro		
210	215	220
Tyr Pro Thr Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His Gly Gly		
225	230	235
		240
Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys		
245	250	

<210> 64
 <211> 740
 <212> DNA
 <213> Hordeum vulgare

<400> 64
 gtgcgtaaag aggtgattaa attcctagaa gaaggtatta tctatcctgt tgctcacagc 60
 gattgggtga gtccggtgca ttgcattcct aagaaaggag gcattaccgt tgtccctaata 120
 gataaggatg aattgatccc atagaggatt attactggct ataggatggg gattgattttt 180
 aggaagtga ataaagccac taggaaagat cattaccctt tgccttttat cgaccaaata 240
 ctagaaaggc tgtctaaaca cacacacttc ttgtttctgg acggttatac tggtttctcc 300
 caaataccag ttgcacaatt tgatcaggag aaaaccactt taacctgaca tttcggtacc 360
 tttgcttata tacgtatgcc ttttggttg tgtaatgcac ctgccacctt tcaaagatgt 420
 atgatggcta tattctccga cttctgtgaa aagattgtca atgttttcat ggataacttc 480
 tccgtttacg ggtgttcctt tgatgattgc ctcaacaacg ttgatcgagt cttacagaga 540
 tgtaaggaca ccaatgttgt cttgaattgg gagaagtgtc actttatggg taatgaaggc 600
 atcgtcttag gacataagat ttctgaaaga ggtattaaag ttgataaggc taaggttgat 660
 gcaatcgaga aaatgccata tccacagata tcaaaggat aagaagtttc cttgggtcatg 720
 ctgggtttcta tagaagggtc 740

<210> 65
 <211> 247
 <212> PRT
 <213> Hordeum vulgare

<400> 65
 Val Arg Lys Glu Val Ile Lys Phe Leu Glu Glu Gly Ile Ile Tyr Pro
 1 5 10 15

Val	Ala	His	Ser	Asp	Trp	Val	Ser	Pro	Val	His	Cys	Ile	Pro	Lys	Lys			
			20					25					30					
Gly	Gly	Ile	Thr	Val	Val	Pro	Asn	Asp	Lys	Asp	Glu	Leu	Ile	Pro	Glx			
		35					40					45						
Arg	Ile	Ile	Thr	Gly	Tyr	Arg	Met	Val	Ile	Asp	Phe	Arg	Lys	Leu	Asn			
	50					55					60							
Lys	Ala	Thr	Arg	Lys	Asp	His	Tyr	Pro	Leu	Pro	Phe	Ile	Asp	Gln	Met			
	65				70					75					80			
Leu	Glu	Arg	Leu	Ser	Lys	His	Thr	His	Phe	Leu	Phe	Leu	Asp	Gly	Tyr			
			85					90						95				
Thr	Gly	Phe	Ser	Gln	Ile	Pro	Val	Ala	Gln	Phe	Asp	Gln	Glu	Lys	Thr			
			100					105					110					
Thr	Leu	Thr	Glx	His	Phe	Gly	Thr	Phe	Ala	Tyr	Ile	Arg	Met	Pro	Phe			
	115					120						125						
Gly	Leu	Cys	Asn	Ala	Pro	Ala	Thr	Phe	Gln	Arg	Cys	Met	Met	Ala	Ile			
	130					135					140							
Phe	Ser	Asp	Phe	Cys	Glu	Lys	Ile	Val	Asn	Val	Phe	Met	Asp	Asn	Phe			
	145				150					155					160			
Ser	Val	Tyr	Gly	Cys	Ser	Phe	Asp	Asp	Cys	Leu	Asn	Asn	Val	Asp	Arg			
			165						170					175				
Val	Leu	Gln	Arg	Cys	Lys	Asp	Thr	Asn	Val	Val	Leu	Asn	Trp	Glu	Lys			
		180						185					190					
Cys	His	Phe	Met	Val	Asn	Glu	Gly	Ile	Val	Leu	Gly	His	Lys	Ile	Ser			
		195					200					205						
Glu	Arg	Gly	Ile	Lys	Val	Asp	Lys	Ala	Lys	Val	Asp	Ala	Ile	Glu	Lys			
	210					215					220							
Met	Pro	Tyr	Pro	Thr	Asp	Ile	Lys	Gly	Ile	Arg	Ser	Phe	Leu	Gly	His			
	225				230					235					240			
Ala	Gly	Phe	Tyr	Arg	Arg	Phe												
				245														

<210> 66

<211> 762

<212> DNA

<213> Avena sativa

<400> 66

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gtgcgaaaagg aggttttcaa gctcatggat gctgggtatta tttaccctat tgctgatagt 60
gaatgggtta gtcattgttca ttgtgttcct aaaaaggagg gtattaccgt tgccctaata 120
gataatgatg agcttattcc tcaaagaata gtggtaggct ataggatgtg catcgatttt 180
aggaaaagtca ataaagttac taagaaagat cactaccgcg ttccttttat tgatcaaata 240
ttggaaagat tttctaaaaa gacccatttt tgttttcttg atggttattc tggtttctct 300
caaattgttg ttaaacaaca agatcaagaa aaaactactt ttacttgccc ttatggaact 360
tatgcttata gatgatgcc ttttggttta tgtaatgtc cttctacttt cctaagggtgc 420
atgtctgcta tctttcatgg tttttgtgag gaaattgtag aagtgttcat ggacgacttt 480
tctgtctacg gaacttcttt tgataattgt ctgcacaacc ttgataaagt tttacagaga 540
tgtgaaggaa ctaatcttgt tcttaattgg gagaaatgcc acttcattgt taatgaaggg 600
attgttcttg ggcataaagt ttctaaaaga ggcatagaag ttgatagagc taagggtgag 660
gcaattgaga agatgccatg tccaagagac atcaaaggta ttcgtagtat ccttggtcat 720
gctggtttct ataggagggt catcaaagac ttcacaaagg tt 762
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<210> 67

<211> 254

<212> PRT

<213> Avena sativa

<400> 67

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Val Arg Lys Glu Val Phe Lys Leu Met Asp Ala Gly Ile Ile Tyr Pro
  1             5             10             15

Ile Ala Asp Ser Glu Trp Val Ser His Val His Cys Val Pro Lys Lys
 20             25             30

Gly Gly Ile Thr Val Val Pro Asn Asp Asn Asp Glu Leu Ile Pro Gln
 35             40             45

Arg Ile Val Val Gly Tyr Arg Met Cys Ile Asp Phe Arg Lys Val Asn
 50             55             60

Lys Val Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
 65             70             75             80

Leu Glu Arg Phe Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly Tyr
 85             90             95

Ser Gly Phe Ser Gln Ile Val Val Lys Gln Gln Asp Gln Glu Lys Thr
100            105            110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Cys Met Pro Phe
115            120            125
```

Gly Leu Cys Asn Ala Pro Ser Thr Phe Leu Arg Cys Met Ser Ala Ile
 130 135 140

Phe His Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys
 165 170 175

Val Leu Gln Arg Cys Glu Gly Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
 195 200 205

Lys Arg Gly Ile Glu Val Asp Arg Ala Lys Val Glu Ala Ile Glu Lys
 210 215 220

Met Pro Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 68
 <211> 762
 <212> DNA
 <213> Avena sativa

<400> 68
 gtgcgcaaag aggtctttaa gttccttgat gctgggtatta tttaccctat tgctgatagt 60
 caatgggtta gccttggtca ttgtgtcccc aagaaagggg gaataactgt tgtgcctaata 120
 gaagataatg agcttatacc ccaaagagta gtgggttggt atagaatgtg cattgatttt 180
 agaaggatta ataaagttac taggaaagat cattatcctt tgccctttat tgatcaaata 240
 cttgagaggt tgtccaaaaa gactcacttt tgttttcttg atggtcattc tgggttttct 300
 caaattgttg tgaaagcaca agaccaagag aaaactactt tcaactgtcc ttatgggtact 360
 tatgattata ggcgtatgcc ttttggttta tgtaatgctc ctgctacctt tcagagatgt 420
 atgtctgcta tatttcatgg tttttgtgaa gaaattgtgg aggttttcat ggacgatttt 480
 tctgtctatg gaacttcttt tgataactgt ttgcacaacc ttgataaatt tttgcagaga 540
 tttgaagaaa ccaaccttgt tcttaattgg gagaaatgcc atttcatggg taatgaaggg 600
 attgttcttg gacacaagat ctcagaaaga ggcattgaag ttgacagagc caaaattgaa 660
 gcaattgaga acatgccttg ccctagagat attaaaggta ttcgtagtat ccttggtcat 720
 gctggtttct atagtaggtt catcaaagac tttacaaaag tt 762

<210> 69

<211> 254

<212> PRT

<213> Avena sativa

<400> 69

Val Arg Lys Glu Val Phe Lys Phe Leu Asp Ala Gly Ile Ile Tyr Pro
1 5 10 15

Ile Ala Asp Ser Gln Trp Val Ser Leu Val His Cys Val Pro Lys Lys
20 25 30

Gly Gly Ile Thr Val Val Pro Asn Glu Asp Asn Glu Leu Ile Pro Gln
35 40 45

Arg Val Val Val Val Tyr Arg Met Cys Ile Asp Phe Arg Arg Ile Asn
50 55 60

Lys Val Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly His
85 90 95

Ser Gly Phe Ser Gln Ile Val Val Lys Ala Gln Asp Gln Glu Lys Thr
100 105 110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Asp Tyr Arg Arg Met Pro Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ser Ala Ile
130 135 140

Phe His Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe
145 150 155 160

Ser Val Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys
165 170 175

Phe Leu Gln Arg Phe Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

Glu Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Glu Ala Ile Glu Asn
210 215 220

Met Pro Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His

225 230 235 240

Ala Gly Phe Tyr Ser Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 70
<211> 756
<212> DNA
<213> Avena sativa

<400> 70
aaggagggttt tttaaactcct tgatgttggt attatattacc ctattgctga tagtgaatgg 60
gttagtcttg ttcatttgtt tcctaaaaag ggaggtatta ccgttggtcc taatgataat 120
gatgagctta ttcctcaaag aatagtggta ggctatagga tgtgcataga ttttaggaaa 180
gttaataaag ttactaagaa agatcactac ccgcttcctt ttattgatca aatgttgga 240
aggttgtcta aaaagacca tttttgtttt cttgatgggt actctagctt ctctcaaatt 300
gctgttaaac aacaagatca agaaaaaact acttttactt gcccttatgg aacttttgct 360
tatagacgta tgcctattgg tttatgtaat gctcctgcta cttttcaaag gtgtatgtct 420
gctatatctt atgggttttg tgaggaaatt gtagaagtgt tcatggatga cttttctgtc 480
tatggaactt cttttgataa ttgcctgcac aaccttgata aagttttgca gagatgtgaa 540
gaaactaata ttgttcttaa ttgggagaaa ttccacttca tggttaatga agggattgtc 600
cttgggcata aagtttctaa aagaggcata gaagttgata gagctaaggt tgaggcaatt 660
gagaagatgc catgccaag agacatcaaa ggtatacgta gtatccttgg tcatgctgg 720
ttctatagaa ggtttatcaa agacttcaca aaggtt 756

<210> 71
<211> 252
<212> PRT
<213> Avena sativa

<400> 71
Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Ile Tyr Pro Ile Ala
1 5 10 15
Asp Ser Glu Trp Val Ser Leu Val His Cys Val Pro Lys Lys Gly Gly
20 25 30
Ile Thr Val Val Pro Asn Asp Asn Asp Glu Leu Ile Pro Gln Arg Ile
35 40 45
Val Val Gly Tyr Arg Met Cys Ile Asp Phe Arg Lys Val Asn Lys Val
50 55 60
Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met Leu Glu
65 70 75 80

Arg Leu Ser Lys Lys Thr His Phe Cys Phe Leu Asp Gly Tyr Ser Ser
85 90 95

Phe Ser Gln Ile Ala Val Lys Gln Gln Asp Gln Glu Lys Thr Thr Phe
100 105 110

Thr Cys Pro Tyr Gly Thr Phe Ala Tyr Arg Arg Met Pro Ile Gly Leu
115 120 125

Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ser Ala Ile Phe His
130 135 140

Gly Phe Cys Glu Glu Ile Val Glu Val Phe Met Asp Asp Phe Ser Val
145 150 155 160

Tyr Gly Thr Ser Phe Asp Asn Cys Leu His Asn Leu Asp Lys Val Leu
165 170 175

Gln Arg Cys Glu Glu Thr Asn Ile Val Leu Asn Trp Glu Lys Phe His
180 185 190

Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser Lys Arg
195 200 205

Gly Ile Glu Val Asp Arg Ala Lys Val Glu Ala Ile Glu Lys Met Pro
210 215 220

Cys Pro Arg Asp Ile Lys Gly Ile Arg Ser Ile Leu Gly His Ala Gly
225 230 235 240

Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 72

<211> 748

<212> DNA

<213> Secale cereale

<400> 72

gtgcggaaag aggtcttttaa actcctagag gcagggtatta actatcccat tgctgatagc 60
cagcgggtaa gtcattgtcca ttgtgttcct aagaaaggag gtatgactgt cgtccctaag 120
gataaagatg aatttatccc gcaaagaata gttacagggt ataggatggg aattgatttt 180
cgtaagttaa ataaagctac tatgaaagat cattaccctt tgccatttat tgatcaaatg 240
ccagacagggt tatccaaaca tactcatttc tgctttctag atgggtattc tgggtttctct 300
caaatacctt tgtcaaaggg ggatcaagaa aagaccacct ttacttgccc tttcgggtacc 360
tttgcttata gaggtatgcc ttttggttta tgtaatgcac ctgctacctt tcaaagatgt 420
atgatcgtaa tattctctgt cttttttgaa aagattgttg aggtattcat ggatgatttc 480

tccgtttatg gaacttcttt tgatgattgc ttaagcaacc ttgatcgagt tttgcagaga 540
 tgtgaagata ctaaccttgt cttgaattgg gagaagtgcc actttatggg taatgaaggc 600
 attttcttgg gacataaaat ttctgaaaga ggtactgaag ttgagaaagc taaagtggat 660
 gctattgaaa agatgccatg ccctaaggat atgaaaggta tacgaagttt ccttggtcac 720
 gctgggtttt ataggaggtt cataaaaag 748

<210> 73

<211> 249

<212> PRT

<213> Secale cereale

<400> 73

Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Ile Asn Tyr Pro
 1 5 10 15

Ile Ala Asp Ser Gln Arg Val Ser His Val His Cys Val Pro Lys Lys
 20 25 30

Gly Gly Met Thr Val Val Pro Lys Asp Lys Asp Glu Phe Ile Pro Gln
 35 40 45

Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
 50 55 60

Lys Ala Thr Met Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
 65 70 75 80

Pro Asp Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Phe Ser Gln Ile Pro Leu Ser Lys Gly Asp Gln Glu Lys Thr
 100 105 110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Gly Met Pro Phe
 115 120 125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Ile Val Ile
 130 135 140

Phe Ser Val Phe Phe Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
 165 170 175

Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Asn Glu Gly Ile Phe Leu Gly His Lys Ile Ser
 195 200 205

Glu Arg Gly Thr Glu Val Glu Lys Ala Lys Val Asp Ala Ile Glu Lys
 210 215 220

Met Pro Cys Pro Lys Asp Met Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys
 245

<210> 74
 <211> 762
 <212> DNA
 <213> Secale cereale

<400> 74
 gtgcggaagg aggtcgtaa gcttccagag gcaggtatta tctatcccgt tgctgatagc 60
 cagtgggtaa gtcattgtcca ttgtgtccct aagaaggagg gtatgactgt cgttcctaata 120
 gacaaacatg aattgatccc gcaaagaata gttacagggt ataggatggg aattgatttc 180
 cgtaagttaa ataaagctac taagaaagat cattaccctt tgccatttat tgatcaaata 240
 ctagacaggt tatccaaaca tactcatttt tgctttctag atggttatta tggtttctct 300
 caaataacctg tgtcaaaagg ggatcaagaa aagaccactt tcacttgtcc tttcgggtacc 360
 tttgcttata gacgtatgcc ttttggttta tgtaatgcac ctgctacctt tcaaagatgt 420
 atgatggcta tattatctga tttttgagaa aagattggtg aggttttcat ggatgatttc 480
 tccgtttacg gaacttcttt tgatgactac ttaagcaaca atgatcgagt tttgcagaga 540
 tgtgaagaca ctaatcttgt tttgaattgg gagaagtgcc actttatggg taatgaaggc 600
 attgtcttgg gacaaaaaat ttctgaaaga ggtattgaag ttgacaaagc taaagtcgat 660
 gctgttgaaa agatgccatg cccaaggac atcaaaggta tacgaagttt ccttgggtcat 720
 gttggggttt ataggagggt catcaaagac ttcacgaaag tt 762

<210> 75
 <211> 254
 <212> PRT
 <213> Secale cereale

<400> 75
 Val Arg Lys Glu Val Val Lys Leu Pro Glu Ala Gly Ile Ile Tyr Pro
 1 5 10 15

Val Ala Asp Ser Gln Trp Val Ser His Val His Cys Val Pro Lys Lys
 20 25 30

Gly Gly Met Thr Val Val Pro Asn Asp Lys His Glu Leu Ile Pro Gln

35	40	45
Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn		
50	55	60
Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met		
65	70	75 80
Leu Asp Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr		
85	90	95
Tyr Gly Phe Ser Gln Ile Pro Val Ser Lys Gly Asp Gln Glu Lys Thr		
100	105	110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe		
115	120	125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile		
130	135	140
Leu Ser Asp Phe Glx Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe		
145	150	155 160
Ser Val Tyr Gly Thr Ser Phe Asp Asp Tyr Leu Ser Asn Asn Asp Arg		
165	170	175
Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Trp Glu Lys		
180	185	190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly Gln Lys Ile Ser		
195	200	205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Val Glu Lys		
210	215	220
Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His		
225	230	235 240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 76

<211> 762

<212> DNA

<213> Secale cereale

<400> 76

gtgcgtaagg aggtgggttaa gtccttagaa gcaggtatta tctatccagt tgctgatagt 60
 cagtgggttaa gtcattgtcca ttatgttctt aagaaaggag gtatgactgt tgtccctaata 120
 gataaagatg aattgatccc gcaaagaata gttacagggt ataggatggg aagtgatttc 180
 cgtaagttga ataaagccac taagaaagat cattaccctt tgccatttat tgatcaaatg 240
 ctagaaagggt tatccaaaca tactcatttc ttctttctag atggttattc tggtttctct 300
 caaatacctg tgtcaaaagg ggatcaagaa aagaccacct ttacttgtag tttcgggtacc 360
 tttgcttata gacgtatgcc ttttgggtta tgtaatgcac ctgctacctt tcaaagatgc 420
 atgatggcta tattctctga cttttgtgaa aagattgttg aggtattcat ggatgatttc 480
 tccggtttacg gaacttcttt tgatgattgc ttaagcaacc ttgatcgagt tttgcagaga 540
 tgtgaagaca ctaaccttgt cttgaattgc gagaagtgc actttatggt taatgaaggc 600
 attgtcttgg gacataaaat ttctgaaata ggtattgaag ttgacaaagc taaagttgat 660
 gctattgaaa agatgccatg cgcaaaggac atcaaaggta tacggagttt ccttgggtcat 720
 gccgggtttt ataggaggtt catcaaagat ttctcaaagg tt 762

<210> 77

<211> 254

<212> PRT

<213> Secale cereale

<400> 77

Val	Arg	Lys	Glu	Val	Val	Lys	Leu	Leu	Glu	Ala	Gly	Ile	Ile	Tyr	Pro
1				5					10					15	

Val	Ala	Asp	Ser	Gln	Trp	Val	Ser	His	Val	His	Tyr	Val	Pro	Lys	Lys
		20						25					30		

Gly	Gly	Met	Thr	Val	Val	Pro	Asn	Asp	Lys	Asp	Glu	Leu	Ile	Pro	Gln
		35					40					45			

Arg	Ile	Val	Thr	Gly	Tyr	Arg	Met	Val	Ser	Asp	Phe	Arg	Lys	Leu	Asn
	50						55				60				

Lys	Ala	Thr	Lys	Lys	Asp	His	Tyr	Pro	Leu	Pro	Phe	Ile	Asp	Gln	Met
65					70					75					80

Leu	Glu	Arg	Leu	Ser	Lys	His	Thr	His	Phe	Phe	Phe	Leu	Asp	Gly	Tyr
				85					90					95	

Ser	Gly	Phe	Ser	Gln	Ile	Pro	Val	Ser	Lys	Gly	Asp	Gln	Glu	Lys	Thr
		100						105					110		

Thr	Phe	Thr	Cys	Thr	Phe	Gly	Thr	Phe	Ala	Tyr	Arg	Arg	Met	Pro	Phe
		115					120						125		

Gly	Leu	Cys	Asn	Ala	Pro	Ala	Thr	Phe	Gln	Arg	Cys	Met	Met	Ala	Ile
	130						135					140			

Phe Ser Asp Phe Cys Glu Lys Ile Val Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
 165 170 175

Val Leu Gln Arg Cys Glu Asp Thr Asn Leu Val Leu Asn Cys Glu Lys
 180 185 190

Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
 195 200 205

Glu Ile Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
 210 215 220

Met Pro Cys Ala Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
 245 250

<210> 78

<211> 759

<212> DNA

<213> Secale cereale

<400> 78

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 gataaagatg aattgatctc gcaaagaatt gttacagggt ataggatggg aattgatttt 180
 cgcaaattaa ataaagccac taagaaagat caataccctt tgccttttat tgatcaaagt 240
 ctagaaagggt tatccaaaca caccattttt tgctttctag atggttattc tagtttctct 300
 caaataccta tgtcaaaagg ggataaagaa aagaccactt ttacttgtcc ctttggtact 360
 ttgcttatag acgtatgcct tttggtttat gtaatgcac tgctacctt caaacatgca 420
 tgatggctat actctatgat tttgtgaaa gaatgttgat gttttcatgg atgatttttg 480
 tatttacgaa acttcttttg atgattgctt gagcaacctt gatcgagttt tgcagagatg 540
 tgaagaaact aatcttgtct tgaactggga aaagtccac tttatgggta atgaaggcat 600
 tgcttgggac ataaaatttc tgaaagaggt accgaagtg acaaagctaa agttgatgct 660
 gttgaaaaga tgccatgtcc caaggacatc aaaggataa gaagtttcct tggatcatgcc 720
 gggttttata ggaggtttat caaggacttc accaagggtt 759

<210> 79

<211> 254

<212> PRT

<213> Secale cereale

<400> 79

Val Arg Lys Glu Val Phe Lys Phe Leu Glu Ala Gly Ile Ile Tyr Pro
1 5 10 15

Val Ala Asp Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
20 25 30

Gly Gly Met Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Ser Gln
35 40 45

Arg Ile Val Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
50 55 60

Lys Ala Thr Lys Lys Asp Gln Tyr Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ser Lys His Thr His Phe Cys Phe Leu Asp Gly Tyr
85 90 95

Ser Ser Phe Ser Gln Ile Pro Met Ser Lys Gly Asp Lys Glu Lys Thr
100 105 110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125

Gly Leu Cys Asn Ala Ser Ala Thr Phe Gln Thr Cys Met Met Ala Ile
130 135 140

Leu Tyr Asp Phe Cys Glu Arg Ile Val Asp Val Phe Met Asp Asp Phe
145 150 155 160

Cys Ile Tyr Glu Thr Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg
165 170 175

Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Ser His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

Glu Arg Gly Thr Glu Val Asp Lys Ala Lys Val Asp Ala Val Glu Lys
210 215 220

Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 80
 <211> 761
 <212> DNA
 <213> Triticum aestivum

<400> 80
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 cagtgggtaa gtcctgtcca ttgtgtccct aagaaggag gtattactgt tgtccctaatt 120
 gataaagatg aattgattcc tcaaagaatt attacgggta taggatggta attgatttcc 180
 gcaaattaaa taaagccact aagagagatc attaccctt accttttatt gatcaaattc 240
 tagaaagatt atgcaaacat acacattatt gcttccaaga tggttatcct ggtttttctc 300
 aaatacctgt gtcggctaaa gatcaatcaa agactacttt tacatgccct tttggtactt 360
 ttgcttatag atgtatgcct tttggtttat gtaatgcacc tgctaccttt caaagatgca 420
 tgatggctat attctctgat ttttgtgaaa agatttgtga ggttttcatg gatgactttt 480
 ccgtctatgg ttccctcttt gatgattgct tgagcaatct tgatcgagtt ttgcagagat 540
 gtgaagaaac taatcttgtc ttgaattggg aaaagtgtca ctttatgggtt aatgaaggta 600
 ttgtcttggg gcacaaagtt tctgaaagag gtattgaagt tgataaagcc aagggttgaca 660
 ctattgaaaa gataccatgt cccaaggaca tcaaagggtac aagaagtttc cttggtcacg 720
 ccggatttta taggaggttc ataaaagatt tcacaaaggt t 761

<210> 81
 <211> 254
 <212> PRT
 <213> Triticum aestivum

<400> 81
 Val Arg Lys Glu Val Leu Lys Phe Leu Glu Val Gly Ile Ile Tyr Pro
 1 5 10 15
 Val Ala Asp Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
 20 25 30
 Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
 35 40 45
 Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
 50 55 60
 Lys Ala Thr Lys Arg Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Ile
 65 70 75 80
 Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Gln Asp Gly Tyr
 85 90 95
 Pro Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr

100	105	110
Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Cys Met Pro Phe		
115	120	125
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile		
130	135	140
Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Asp Phe		
145	150	155
		160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Leu Asp Arg		
165	170	175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys		
180	185	190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser		
195	200	205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Thr Ile Glu Lys		
210	215	220
Ile Pro Cys Pro Lys Asp Ile Lys Gly Thr Arg Ser Phe Leu Gly His		
225	230	235
		240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 82

<211> 780

<212> DNA

<213> Triticum aestivum

<400> 82

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aagtgggtaa ttctgtcca ttaagtgatc gtgattactg ttgttcctaa gaaggagggt 120
attaccgttg ttctaataga taaagatgaa ttgattcctc aaagaaccat tactggttat 180
aggatggtaa ttgatttccg caaattaaat aaggctacta aaaaatatca ttacccttta 240
ccttttatcg atcaaatgct agaaagatta tccaaacata cacatttttg ctttctagat 300
ggttactctg gtttctctca aatacctgtg tcagccaaag atcaatcaaa gactactttt 360
acatgccctt ttggtacttt tgcttataga cgtatgcctt ttggtttatg taatgcacct 420
gctacctttc aaagatacat gatggctata ttatctgact tttgtgaaaa gatttgtag 480
gttttcatgg acgactcttc catctatgga tcttcttttg atgattgctt gagcaacctt 540
gatcgagttt tgcagagatg tgaagaaact tatcttgtct tgaattggga aaagtgccaa 600
tttatggtta atgaaggat tgtcctgggg cataaagttt ctgaaagagg tattcgagtt 660
gataaagcca aggttgatgc tattgaaaag atgccatgtc ccatggacat caaaggata 720

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agaagtttcc ttggtcatgc cggtttttat aggaggttca taaaagactt cacgaagggt 780

<210> 83

<211> 260

<212> PRT

<213> Triticum aestivum

<400> 83

Val	Arg	Lys	Glu	Val	Phe	Lys	Leu	Leu	Glu	Ala	Gly	Ile	Ile	Tyr	Pro
1				5					10					15	

Val	Ala	Asp	Ser	Lys	Trp	Val	Ile	Pro	Val	His	Glx	Val	Ile	Val	Ile
		20						25					30		

Thr	Val	Val	Pro	Lys	Lys	Gly	Gly	Ile	Thr	Val	Val	Pro	Asn	Asp	Lys
		35					40						45		

Asp	Glu	Leu	Ile	Pro	Gln	Arg	Thr	Ile	Thr	Gly	Tyr	Arg	Met	Val	Ile
	50					55						60			

Asp	Phe	Arg	Lys	Leu	Asn	Lys	Ala	Thr	Lys	Lys	Tyr	His	Tyr	Pro	Leu
65					70					75					80

Pro	Phe	Ile	Asp	Gln	Met	Leu	Glu	Arg	Leu	Ser	Lys	His	Thr	His	Phe
				85					90					95	

Cys	Phe	Leu	Asp	Gly	Tyr	Ser	Gly	Phe	Ser	Gln	Ile	Pro	Val	Ser	Ala
		100						105					110		

Lys	Asp	Gln	Ser	Lys	Thr	Thr	Phe	Thr	Cys	Pro	Phe	Gly	Thr	Phe	Ala
	115						120					125			

Tyr	Arg	Arg	Met	Pro	Phe	Gly	Leu	Cys	Asn	Ala	Pro	Ala	Thr	Phe	Gln
	130					135					140				

Arg	Tyr	Met	Met	Ala	Ile	Leu	Ser	Asp	Phe	Cys	Glu	Lys	Ile	Cys	Glu
145					150					155				160	

Val	Phe	Met	Asp	Asp	Ser	Ser	Ile	Tyr	Gly	Ser	Ser	Phe	Asp	Asp	Cys
				165					170					175	

Leu	Ser	Asn	Leu	Asp	Arg	Val	Leu	Gln	Arg	Cys	Glu	Glu	Thr	Tyr	Leu
		180						185					190		

Val	Leu	Asn	Trp	Glu	Lys	Cys	Gln	Phe	Met	Val	Asn	Glu	Gly	Ile	Val
	195						200						205		

Leu Gly His Lys Val Ser Glu Arg Gly Ile Arg Val Asp Lys Ala Lys
 210 215 220

Val Asp Ala Ile Glu Lys Met Pro Cys Pro Met Asp Ile Lys Gly Ile
 225 230 235 240

Arg Ser Phe Leu Gly His Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp
 245 250 255

Phe Thr Lys Val
 260

<210> 84
 <211> 762
 <212> DNA
 <213> Triticum aestivum

<400> 84
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 caatgggtaa gtcctgtcca ttgtgtcctt aagaaggag gtattactgt tgtccctaata 120
 gataaagatg aattgattcc gcaaagaatt atcacagggt ataggatggg aattgatttc 180
 cgtaagttaa ataaagctac taagaaagat cattaccctt taccttttat tgatcaaata 240
 ttagaaagat tatgcaaaca tacacattat tgctttctag atgggtattc tgggtttctc 300
 caaataacctg tgtcagctaa ggatcaatca aagactactt ttacatgccc ttttggtact 360
 tttgggtata gacgtatgcc tttcgattta tgtaatgcac ctgctacctt tcaaataatgc 420
 atgatggcta tattctctga cttttgcgaa aagatttggt aggttttcat ggacgacttt 480
 tccgtctatg gttcctctta tgatgattgc ttgagcaatc ttaatcgagt tttgcagaga 540
 tgtgaagaaa ctaatcttgt cttgaattgg gaaaagtgcc actttatggg taatgaagg 600
 attgtcttgg ggcacaaagt ttctgaacga ggtattgaag ttgataaggc caaggttgat 660
 gctattgaaa agatgacatg tccaaggac atcaaaggta taagaagttt ccttggtcac 720
 gccagatttt ataggagggt cataaaagac ttcacaaagg tt 762

<210> 85
 <211> 254
 <212> PRT
 <213> Triticum aestivum

<400> 85
 Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
 1 5 10 15

Val Val Asp Ser Gln Trp Val Ser Pro Val His Cys Val Leu Lys Lys
 20 25 30

Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
 35 40 45

Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
 50 55 60

Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
 65 70 75 80

Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr
 100 105 110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Gly Tyr Arg Arg Met Pro Phe
 115 120 125

Asp Leu Cys Asn Ala Pro Ala Thr Phe Gln Ile Cys Met Met Ala Ile
 130 135 140

Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Ser Ser Tyr Asp Asp Cys Leu Ser Asn Leu Asn Arg
 165 170 175

Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
 195 200 205

Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys
 210 215 220

Met Thr Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 86

<211> 762

<212> DNA

<213> Triticum aestivum

<400> 86

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cagtgggtaa gtccctgtcca ttgtgtccct aagaagggag gtattactgt tgtccctaata 120
 gataaagatg aattgattcc tcaaagaatt attacagggt ataggatggg aattgatttc 180
 cgcaaattaa ataaagccac caagaaagat cattaccctt taccttttat tgatcaaatg 240
 ctagaaagat tatgcaaaca tacacattat tgcttcctag atggttattc tggtttctct 300
 caaataacctg tgtcgggctaa agatcaatca aagactactt ttacatgccc ttttgggtact 360
 tttgcttata gacgtatgcc ttttgggttta tgtaatgcac cttctacctt tcaaagatgc 420
 atgatggcta tattctctga tttttgtgaa aagatttgtg aggttttcat ggacgaattt 480
 tccgtctatg gttcctcttt tgatgattgc ttgagcaatc ctgatcgagt tttgcagaga 540
 tgtgaagaaa ctaatcttgt cttgaattgg gaaaagtgcc actttatggg taatgaagggt 600
 attgtcttgg ggcacaaagt ttctgaaaga ggtattgaag ttgataaagc caaggttgac 660
 gctattgaaa agatgccatg tcccaaggac atcaaaggta taagaagttt ccttgggtcac 720
 gccggatttt ataggagggt cataaaaagac ttcacaaagg tt 762

<210> 87

<211> 254

<212> PRT

<213> Triticum aestivum

<400> 87

Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Gly Ile Ile Tyr Pro
 1 5 10 15

Val Ala Glu Ser Gln Trp Val Ser Pro Val His Cys Val Pro Lys Lys
 20 25 30

Gly Gly Ile Thr Val Val Pro Asn Asp Lys Asp Glu Leu Ile Pro Gln
 35 40 45

Arg Ile Ile Thr Gly Tyr Arg Met Val Ile Asp Phe Arg Lys Leu Asn
 50 55 60

Lys Ala Thr Lys Lys Asp His Tyr Pro Leu Pro Phe Ile Asp Gln Met
 65 70 75 80

Leu Glu Arg Leu Cys Lys His Thr His Tyr Cys Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Phe Ser Gln Ile Pro Val Ser Ala Lys Asp Gln Ser Lys Thr
 100 105 110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Pro Phe
 115 120 125

Gly Leu Cys Asn Ala Pro Ser Thr Phe Gln Arg Cys Met Met Ala Ile
 130 135 140

Phe Ser Asp Phe Cys Glu Lys Ile Cys Glu Val Phe Met Asp Glu Phe

145	150	155	160
Ser Val Tyr Gly Ser Ser Phe Asp Asp Cys Leu Ser Asn Pro Asp Arg			
	165	170	175
Val Leu Gln Arg Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys			
	180	185	190
Cys His Phe Met Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser			
	195	200	205
Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ala Ile Glu Lys			
	210	215	220
Met Pro Cys Pro Lys Asp Ile Lys Gly Ile Arg Ser Phe Leu Gly His			
	225	230	235
			240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val			
	245	250	

<210> 88
 <211> 762
 <212> DNA
 <213> Triticum aestivum

<400> 88
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 gaatgggtaa gccctctcca ttgtgttccct aaaaaggag gtattaccgt tgttcttaat 120
 gataaagatg aattgatccc gcaaataatt attacagggt ataggatggg aattgatttc 180
 cataagttaa ataaagctac taagaaagat cattaccctt tacctcttat tgatcaaatt 240
 ctagaaagac tatccaaaca cacacatttc tgctttctag atgggtatac tggtttctct 300
 caaataacctg tgtcagtga ggatcaatct aaaactactt ttacttgccc ttttggtact 360
 tttgcttata gacttatgcc ttttggttta tgtaatgcac ctacttcctt tcaaagatgc 420
 atgatggcta tattctctgt tttttgtgaa aatatttgtg aggtattcat ggatgatttc 480
 tccgtttatg gatcctcttt tgatgattgt ttgagcaacc ttgatcgagt tttgcagaga 540
 tgccaagaca ctagtctcat cctgaattgg gaaaagtgtc actttatggg taatgaaggc 600
 attgtcttgg ggcataagat ttccgagaga ggtattgaag ttgacaaagc caaagttgat 660
 gctattgaaa agattccatg tcccaaggac ataaaaggta taagaagttt ccttggtcat 720
 gctgggttttt ataggagggt catcaaagac ttctcaaagg tt 762

<210> 89
 <211> 254
 <212> PRT
 <213> Triticum aestivum

<400> 89

Val	Arg	Lys	Glu	Val	Phe	Lys	Phe	Leu	Glu	Ala	Gly	Ile	Thr	Tyr	Pro	1	5	10	15
Val	Ala	Asp	Ser	Glu	Trp	Val	Ser	Pro	Leu	His	Cys	Val	Pro	Lys	Lys	20	25	30	
Gly	Gly	Ile	Thr	Val	Val	Leu	Asn	Asp	Lys	Asp	Glu	Leu	Ile	Pro	Gln	35	40	45	
Ile	Ile	Ile	Thr	Gly	Tyr	Arg	Met	Val	Ile	Asp	Phe	His	Lys	Leu	Asn	50	55	60	
Lys	Ala	Thr	Lys	Lys	Asp	His	Tyr	Pro	Leu	Pro	Leu	Ile	Asp	Gln	Ile	65	70	75	80
Leu	Glu	Arg	Leu	Ser	Lys	His	Thr	His	Phe	Cys	Phe	Leu	Asp	Gly	Tyr	85	90	95	
Thr	Gly	Phe	Ser	Gln	Ile	Pro	Val	Ser	Val	Lys	Asp	Gln	Ser	Lys	Thr	100	105	110	
Thr	Phe	Thr	Cys	Pro	Phe	Gly	Thr	Phe	Ala	Tyr	Arg	Leu	Met	Pro	Phe	115	120	125	
Gly	Leu	Cys	Asn	Ala	Pro	Thr	Ser	Phe	Gln	Arg	Cys	Met	Met	Ala	Ile	130	135	140	
Phe	Ser	Val	Phe	Cys	Glu	Asn	Ile	Cys	Glu	Val	Phe	Met	Asp	Asp	Phe	145	150	155	160
Ser	Val	Tyr	Gly	Ser	Ser	Phe	Asp	Asp	Cys	Leu	Ser	Asn	Leu	Asp	Arg	165	170	175	
Val	Leu	Gln	Arg	Cys	Glu	Asp	Thr	Ser	Leu	Ile	Leu	Asn	Trp	Glu	Lys	180	185	190	
Cys	His	Phe	Met	Val	Asn	Glu	Gly	Ile	Val	Leu	Gly	His	Lys	Ile	Ser	195	200	205	
Glu	Arg	Gly	Ile	Glu	Val	Asp	Lys	Ala	Lys	Val	Asp	Ala	Ile	Glu	Lys	210	215	220	
Ile	Pro	Cys	Pro	Lys	Asp	Ile	Lys	Gly	Ile	Arg	Ser	Phe	Leu	Gly	His	225	230	235	240
Ala	Gly	Phe	Tyr	Arg	Arg	Phe	Ile	Lys	Asp	Phe	Ser	Lys	Val	245	250				

<210> 90
 <211> 791
 <212> DNA
 <213> *Gossypium hirsutum*

<400> 90
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 aattgggtta gcccagtaca catagtacca aaaaagacca gtgcaaccgt aatcgagaat 120
 tcggcaggtg agatagttcc cactcgggtc caaaacgggt ggagagtatg catcgattac 180
 aggaagttga attccttaac tcggaaggat cactttccac ttccttttat tgaccagatg 240
 ttagaacgtt tagctggaaa gtctcattat ttagaacgtt tagctggaaa gtctcattat 300
 tggtgttttg atggttacta aggttttttc cagatcccag tggcaccgga ggatcaagaa 360
 agacaatgtt tacgtgcca tttggcacgt tttcttacag acggatgccg ttcggactct 420
 gtaatgcacc agccagtttt cataggtgca tggtaagtat attttcagac tacgtcgata 480
 aaattatcga ggtgttcatt gacgacttta ctgtatatgg tgagtccttc gaggtaagtc 540
 tgacgaacct tgcaaaaatt ttggaaagat gcttagaatt taatcttggt cttaaattatg 600
 agaaatgccca ttttatggta gacaagggat tagttctagg tcatattatt tctgctgatg 660
 gaatttctgt tgataaagca aaaatcaaca tcattaactc actaccatac cccacaactg 720
 tgaggggagat ttggtctttc cttgggtcatg caggtttcta caagtgggtc atcaaagact 780
 tttcaaaagt t 791

<210> 91
 <211> 264
 <212> PRT
 <213> *Gossypium hirsutum*

<400> 91
 Val Arg Lys Glu Val Leu Lys Leu Leu Asp Asp Gly Met Ile Tyr Pro
 1 5 10 15
 Ile Ser Asn Ser Asn Trp Val Ser Pro Val His Ile Val Pro Lys Lys
 20 25 30
 Thr Ser Ala Thr Val Ile Glu Asn Ser Ala Gly Glu Ile Val Pro Thr
 35 40 45
 Arg Val Gln Asn Gly Trp Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60
 Ser Leu Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
 65 70 75 80
 Leu Glu Arg Leu Ala Gly Lys Ser His Tyr Leu Glu Arg Leu Ala Gly
 85 90 95
 Lys Ser His Tyr Cys Cys Leu Asp Gly Tyr Glx Gly Phe Phe Gln Ile

100	105	110
Pro Val Ala Pro Glu Asp Gln Glu Lys Thr Met Phe Thr Cys Pro Phe		
115	120	125
Gly Thr Phe Ser Tyr Arg Arg Met Pro Phe Gly Leu Cys Asn Ala Pro		
130	135	140
Ala Ser Phe His Arg Cys Met Val Ser Ile Phe Ser Asp Tyr Val Asp		
145	150	155
Lys Ile Ile Glu Val Phe Met Asp Asp Phe Thr Val Tyr Gly Glu Ser		
165	170	175
Phe Glu Val Ser Leu Thr Asn Leu Ala Lys Ile Leu Glu Arg Cys Leu		
180	185	190
Glu Phe Asn Leu Val Leu Asn Tyr Glu Lys Cys His Phe Met Val Asp		
195	200	205
Lys Gly Leu Val Leu Gly His Ile Ile Ser Ala Asp Gly Ile Ser Val		
210	215	220
Asp Lys Ala Lys Ile Asn Ile Ile Asn Ser Leu Pro Tyr Pro Thr Thr		
225	230	235
Val Arg Glu Ile Trp Ser Phe Leu Gly His Ala Gly Phe Tyr Lys Trp		
245	250	255
Phe Ile Lys Asp Phe Ser Lys Val		
260		

<210> 92

<211> 763

<212> DNA

<213> *Gossypium hirsutum*

<400> 92

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gtgcgtaaag aggtcgtaaa gctacttgat tccgggatga tctatcccat atctgacaat 60
aattgggtta gtccagtcca catagtaccc aaaaagaccg gtgtaaccgt aattgagaat 120
tcagcaggtg agatgggtcc cacttaagtc cgaaacggtc ggagagtatg catcgattac 180
aggaagttga attccttaac tcggaaagat cactttccac ttctttttat tgatcagatg 240
ttagaacatt tagccagaaa gtctcattat tgttgctctg atggttactc aggttttttc 300
cagatcccaa tggcactaaa ggatcaagaa aagatgacat ttacgtgccc atttggcatg 360
ttcgcttata gaaggatgtc gtttcagact ttgcaatgca ccaaccatgt ttcagaggtg 420
catgataagt atattttttg actatgtaa gaaaataatt gaggtgttca tggacgaatt 480
tactgtatat agtgagtcct tcgaggtata tttgtcaa atctagaaaa ttttggaag 540

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atgcttagaa tttaatcttg ttctaaatta tgagaattgc tatttaatgg tagacaaggg 600
 attagttcta ggtcatatca tttctgctaa ggggaatttct gtcgataaag taaaaattaa 660
 catcataagc tcaataccat accccacaac tgtgagggag attcgttctt tccttagtca 720
 tataggtttc tataggcgat tcatcaagga cttttcaaaa gtt 763

<210> 93

<211> 254

<212> PRT

<213> Gossypium hirsutum

<400> 93

Val Arg Lys Glu Val Val Lys Leu Leu Asp Ser Gly Met Ile Tyr Pro
 1 5 10 15

Ile Ser Asp Asn Asn Trp Val Ser Pro Val His Ile Val Pro Lys Lys
 20 25 30

Thr Gly Val Thr Val Ile Glu Asn Ser Ala Gly Glu Met Val Pro Thr
 35 40 45

Glx Val Arg Asn Gly Arg Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60

Ser Leu Thr Arg Lys Asp His Phe Pro Leu Leu Phe Ile Asp Gln Met
 65 70 75 80

Leu Glu His Leu Ala Arg Lys Ser His Tyr Cys Cys Leu Asp Gly Tyr
 85 90 95

Ser Gly Phe Phe Gln Ile Pro Met Ala Leu Lys Asp Gln Glu Lys Met
 100 105 110

Thr Phe Thr Cys Pro Phe Gly Met Phe Ala Tyr Arg Arg Met Ser Phe
 115 120 125

Arg Leu Cys Asn Ala Pro Thr Met Phe Gln Arg Cys Met Ile Ser Ile
 130 135 140

Phe Phe Asp Tyr Val Lys Lys Ile Ile Glu Val Phe Met Asp Glu Phe
 145 150 155 160

Thr Val Tyr Ser Glu Ser Phe Glu Val Tyr Leu Ser Asn Leu Glu Lys
 165 170 175

Phe Leu Glu Arg Cys Leu Glu Phe Asn Leu Val Leu Asn Tyr Glu Asn
 180 185 190

Cys Tyr Leu Met Val Asp Lys Gly Leu Val Leu Gly His Ile Ile Ser
 195 200 205

Ala Lys Gly Ile Ser Val Asp Lys Val Lys Ile Asn Ile Ile Ser Ser
 210 215 220

Ile Pro Tyr Pro Thr Thr Val Arg Glu Ile Arg Ser Phe Leu Ser His
 225 230 235 240

Ile Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val
 245 250

<210> 94
 <211> 723
 <212> DNA
 <213> Gossypium hirsutum

<400> 94
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 gattgggtta gctgggttca tgcgtgccca aagaaaactg gcgtgacagt ggtgaaaaac 120
 tcatcaggag agctagtccc taccgagtc cagaatcgat ggagggttg catcgattac 180
 aggaagtga acgcagctac ccgaaatgac cttttccac ttcccttcat tgatcaaatg 240
 ctgcagcgat tagctaataa gaccattat tgttgtctcg atgggtactc aggacttttc 300
 caaattccgg tggcacctga ggatcaagac aaaacaactt tcacgtgcc ctttggaacg 360
 tttgctata gaagaatgtc gtttggactc tgtaatgtc cggccacttt ccagagatgt 420
 atgggtgagca tttctctga ttatgtcgag aaaatcattg aattcttcat ggatgacttc 480
 acggtgtacg gtaactctt taacgaatgt ctgcataatc ttgctaagat attacagaga 540
 tgccatagaat ttaattctgt tttaaattat gaaaaatgcc acttcatggt tgacaaagga 600
 ttaattttgg gtcatatagt ttcttcagaa ggtattgagg tcaataaagc aaaaacgaat 660
 attattgact cattacctta cccagatgt tacagacgat tcataaagga cttcacaaaa 720
 gtt 723

<210> 95
 <211> 241
 <212> PRT
 <213> Gossypium hirsutum

<400> 95
 Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ala Gly Met Ile Tyr Ser
 1 5 10 15

Ile Phe Asp Ser Asp Trp Val Ser Trp Val His Val Val Pro Lys Lys
 20 25 30

Thr Gly Val Thr Val Val Lys Asn Ser Ser Gly Glu Leu Val Pro Thr
 35 40 45

Arg Val Gln Asn Arg Trp Arg Val Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60

Ala Ala Thr Arg Asn Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ala Asn Lys Thr His Tyr Cys Cys Leu Asp Gly Tyr
85 90 95

Ser Gly Leu Phe Gln Ile Pro Val Ala Pro Glu Asp Gln Asp Lys Thr
100 105 110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Val Ser Ile
130 135 140

Phe Ser Asp Tyr Val Glu Lys Ile Ile Glu Phe Phe Met Asp Asp Phe
145 150 155 160

Thr Val Tyr Gly Asn Ser Phe Asn Glu Cys Leu Asp Asn Leu Ala Lys
165 170 175

Ile Leu Gln Arg Cys Leu Glu Phe Asn Leu Val Leu Asn Tyr Glu Lys
180 185 190

Cys His Phe Met Val Asp Lys Gly Leu Ile Leu Gly His Ile Val Ser
195 200 205

Ser Glu Gly Ile Glu Val Asn Lys Ala Lys Thr Asn Ile Ile Asp Ser
210 215 220

Leu Pro Tyr Pro Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys
225 230 235 240

Val

<210> 96

<211> 762

<212> DNA

<213> Lycopersicon esculentum

<400> 96

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gaaaaaatg agttgatccc aaccatgata gtcacataat ggagaatatg catggattac 180
aggaaattga atgaagccac caggaaggac cattaccggt tcccttttat tgatcagatg 240
ttggaccggt tggctgggga ataataattat tgttttctta atggctatct acggtacaac 300
caaattgtga tttcaccaaa ggattaagag aaaaccactt tcacttgccc gtatggtaca 360
tatgctttca aaaagatacc ttttgggtta tgaaatgcct cggctacttt ccaatgatgc 420
atgatggcta tttttcatga tatggttgaa gattttgttg agatattcat gaatgatttc 480
tcagtgtttg gggattcttt tgatatgtgc ttggagaatt tggacagtgt gttggctagt 540
tgtgaagaaa ctaatctttt cctaaactgg gaataatagc aattttctagt aaaggaaggg 600
attatgctag gacataaggt gtcaaagaga ggtatggaag ttgatagtgc caaagtggag 660
gttattgaaa agcttcccc tcctatatct gttaaaggga tgcaaagttt tctgggtcat 720
gttgggttct ataggagatt cataaaagac ttcacaaagg tt 762

<210> 97

<211> 254

<212> PRT

<213> *Lycopersicon esculentum*

<400> 97

Val	Arg	Lys	Glu	Val	Val	Lys	Leu	Leu	Asp	Thr	Gly	Ile	Val	Glx	Pro
1				5					10					15	

Ile	Ser	Asp	Asn	Lys	Glx	Val	Ser	Pro	Val	Gln	Cys	Glu	Pro	Lys	Lys
			20					25					30		

Gly	Asp	Ile	Thr	Val	Ile	Thr	Asn	Glu	Lys	Asn	Glu	Leu	Ile	Pro	Thr
	35						40					45			

Met	Ile	Val	Thr	Glx	Trp	Arg	Ile	Cys	Met	Asp	Tyr	Arg	Lys	Leu	Asn
	50					55					60				

Glu	Ala	Thr	Arg	Lys	Asp	His	Tyr	Pro	Val	Pro	Phe	Ile	Asp	Gln	Met
	65				70					75				80	

Leu	Asp	Arg	Leu	Ala	Gly	Glu	Glx	Tyr	Tyr	Cys	Phe	Leu	Asn	Gly	Tyr
			85					90						95	

Leu	Arg	Tyr	Asn	Gln	Ile	Val	Ile	Ser	Pro	Lys	Asp	Glx	Glu	Lys	Thr
		100						105					110		

Thr	Phe	Thr	Cys	Pro	Tyr	Gly	Thr	Tyr	Ala	Phe	Lys	Lys	Ile	Pro	Phe
		115					120					125			

Gly	Leu	Glx	Asn	Ala	Ser	Ala	Thr	Phe	Gln	Glx	Cys	Met	Met	Ala	Ile
	130					135					140				

Phe	His	Asp	Met	Val	Glu	Asp	Phe	Val	Glu	Ile	Phe	Met	Asn	Asp	Phe
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

145		150		155		160
Ser Val Phe Gly Asp Ser Phe Asp Met Cys Leu Glu Asn Leu Asp Ser						
	165		170		175	
Val Leu Ala Ser Cys Glu Glu Thr Asn Leu Phe Leu Asn Trp Glu Glx						
	180		185		190	
Glx Gln Phe Leu Val Lys Glu Gly Ile Met Leu Gly His Lys Val Ser						
	195		200		205	
Lys Arg Gly Met Glu Val Asp Ser Ala Lys Val Glu Val Ile Glu Lys						
	210		215		220	
Leu Pro Pro Pro Ile Ser Val Lys Gly Met Gln Ser Phe Leu Gly His						
	225		230		235	240
Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val						
	245		250			

<210> 98

<211> 689

<212> DNA

<213> Lycopersicon esculentum

<400> 98

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gtgggtcccca acgaaaagaa tgaacttggt cgaatgagac cggttactgg atggaggggtg 180
tgcattggatt accgtaaact gaactcatag actgaaaaag actattttca tatgcccttc 240
atggatcaga tgttgatag acttgccgga aaaggggtgg attgttttct tgatgggtat 300
tcgggggtata atcagatttc tattgcacca gaagatcaag agaaaaccac tttcacttgt 360
ccatacggga cttttgcatt cagaagaatg tcgtttgggt tgtgcaatgc acccgcaacc 420
tttcagagat ggatgatgtc aatattttct gacatgatgg aggatactat agagggtttt 480
atggatgatt tttctgtggg tgggtattca ttcgagcggg gcttgtccaa tttatctgag 540
gtttttaaga gatgtgaaga ctgcaatttg gtactaaact gggaaaagtg tcatttcatg 600
gtgaaagagg gtatttgtgt gggtcacgc atttcagaaa agggcatgca tgtttttact 660
ggtgattcat caaagacttc acaaaggtt                                     689

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<210> 99

<211> 229

<212> PRT

<213> Lycopersicon esculentum

<400> 99

Arg Lys Glu Val Val Lys Leu Glu Ile Ile Lys Glx Leu Asp Ala Arg

1	5	10	15
Val Ile Tyr Pro Ile Ala Asp Ser Ser Trp Val Cys Leu Val Gln Cys			
20	25	30	
Val Pro Lys Lys Gly Gly Met Thr Val Val Pro Asn Glu Lys Asn Glu			
35	40	45	
Leu Val Arg Met Arg Pro Val Thr Gly Trp Arg Val Cys Met Asp Tyr			
50	55	60	
Arg Lys Leu Asn Ser Glx Thr Glu Lys Asp Tyr Phe His Met Pro Phe			
65	70	75	80
Met Asp Gln Met Leu Asp Arg Leu Ala Gly Lys Gly Trp Tyr Cys Phe			
85	90	95	
Leu Asp Gly Tyr Ser Gly Tyr Asn Gln Ile Ser Ile Ala Pro Glu Asp			
100	105	110	
Gln Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Phe Arg			
115	120	125	
Arg Met Ser Phe Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Trp			
130	135	140	
Met Met Ser Ile Phe Ser Asp Met Met Glu Asp Thr Ile Glu Val Phe			
145	150	155	160
Met Asp Asp Phe Ser Val Val Gly Asp Ser Phe Glu Arg Cys Leu Ser			
165	170	175	
Asn Leu Ser Glu Val Leu Lys Arg Cys Glu Asp Cys Asn Leu Val Leu			
180	185	190	
Asn Trp Glu Lys Cys His Phe Met Val Lys Glu Gly Ile Val Leu Gly			
195	200	205	
His Arg Ile Ser Glu Lys Gly Met His Val Phe Thr Gly Asp Ser Ser			
210	215	220	
Lys Thr Ser Gln Arg			
225			

<210> 100

<211> 760

<212> DNA

<213> Lycopersicon esculentum

<400> 100

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agtggggttag tctagtacaa tgtgtaccta aaaagggagg catggcaatg attactaatg 120
aaaacaatga gtttatccca accagcacag tcacaagatg gcgaatatgc atgaattaca 180
cgaagttaat gaagccacta ggaagaatca ttacccaatt ctttttattg attatatgtt 240
ggaccgggta gctgggcaag aatattattg ttttttggtat tactaatcag ggtacaacta 300
aattttgatt gcaccagagg atcaagagaa aacaactttc acttgcccggt atggtacata 360
tgctttcaag aggatacctt ttgggttatg caatgctctg tctaatttcc aaagatgcat 420
gatgactatt tttcatgata tgggtgaata ttttgaggat atattcatgg atgatttctt 480
agtgttttgg gagtcttttg atagatgctt ggagaatttg aacagggtgt tagctagggtg 540
cgaacaaact aatcttgtcc tgaactggga aaaatgtcat tttttagtaa aggaagggaa 600
tttttcgggg cataaggtgt aaaagatagg gctggaagtt gatcatgaca aagtggaagt 660
aattgaaaag atctcctctc ccatttttgt gaaacgggtg agaagtttac taggtcatgc 720
tgagttttac aggatattca tcaaggactt ctcaaagggtt 760
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<210> 101

<211> 254

<212> PRT

<213> Lycopersicon esculentum

<400> 101

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Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Pro
  1             5             10             15

Ile Ser Asp Asn Lys Trp Val Ser Leu Val Gln Cys Val Pro Lys Lys
      20             25             30

Gly Gly Met Ala Met Ile Thr Asn Glu Asn Asn Glu Phe Ile Pro Thr
      35             40             45

Ser Thr Val Thr Arg Trp Arg Ile Cys Met Asn Tyr Thr Lys Leu Asn
      50             55             60

Glu Ala Thr Arg Lys Asn His Tyr Pro Ile Leu Phe Ile Asp Tyr Met
      65             70             75             80

Leu Asp Arg Leu Ala Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Tyr Glx
      85             90             95

Ser Gly Tyr Asn Glx Ile Leu Ile Ala Pro Glu Asp Gln Glu Lys Thr
      100            105            110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Phe Lys Arg Ile Pro Phe
      115            120            125
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Gly Leu Cys Asn Ala Leu Ser Asn Phe Gln Arg Cys Met Met Thr Ile
 130 135 140

Phe His Asp Met Val Glu Tyr Phe Glu Asp Ile Phe Met Asp Asp Phe
 145 150 155 160

Leu Val Phe Trp Glu Ser Phe Asp Arg Cys Leu Glu Asn Leu Asn Arg
 165 170 175

Leu Leu Ala Arg Cys Glu Gln Thr Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Leu Val Lys Glu Gly Asn Phe Ser Gly His Lys Val Glx
 195 200 205

Lys Ile Gly Leu Glu Val Asp His Asp Lys Val Glu Val Ile Glu Lys
 210 215 220

Ile Ser Ser Pro Ile Phe Val Lys Arg Val Arg Ser Leu Leu Gly His
 225 230 235 240

Ala Glu Phe Tyr Arg Ile Phe Ile Lys Asp Phe Ser Lys Val
 245 250

<210> 102

<211> 776

<212> DNA

<213> Lycopersicon esculentum-

<400> 102

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 ctgtgggtccc caataagaaa aatgaacttg ttctaattgag accggttact ggaggggtggg 180
 tgtgtatgga ttaccgtaaa ttaaattgcat ggactgaaaa agaccatttt cctatgccct 240
 tcatggatca gatgttggat agacttgccg aaaaaggggtg gtactgtttt cttgatggat 300
 agtcagggtta taattagatt tctattgcac cagaagatca agagaaaacc acattttactt 360
 gtccatatgg gacctttgca ttgaagagaa tgtcgtttgg gttgtgcaat gcacccgcca 420
 catttcacag atgtaaaaat gttgatattc ttcgacatgg tggatgatac tattgatgct 480
 tttatggatg atttttctct tgttgggtgaa tcattcgaga ggtgtttgaa ccatttatct 540
 gatgtcctta agagatgtga agactgcaat ttagtactaa attgggaaaa atgccacttc 600
 atgggtgaaaa aaggtattgt tttgggtcat cgcattccag aaaagggcat agaggttgat 660
 cgagctaaag tagaggtaat agagagactt cccccactat ctctgtaaaa ggtgtgagaa 720
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<210> 103

<211> 258

<212> PRT

<213> Lycopersicon esculentum

<400> 103

Ala Glu Arg Ser Val Glx Thr Gly Ile Ile Lys Trp Leu Asp Ala Gly
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Val Ile Tyr Pro Ile Ser Asp Ser Ser Trp Val Cys Pro Ile Gln Cys
20 25 30

Val Pro Lys Lys Gly Gly Met Thr Val Val Pro Asn Lys Lys Asn Glu
35 40 45

Leu Val Leu Met Arg Pro Val Thr Gly Gly Trp Val Cys Met Asp Tyr
50 55 60

Arg Lys Leu Asn Ala Trp Thr Glu Lys Asp His Phe Pro Met Pro Phe
65 70 75 80

Met Asp Gln Met Leu Asp Arg Leu Ala Glu Lys Gly Trp Tyr Cys Phe
85 90 95

Leu Asp Gly Glx Ser Gly Tyr Asn Glx Ile Ser Ile Ala Pro Glu Asp
100 105 110

Gln Glu Lys Thr Thr Phe Thr Cys Pro Tyr Gly Thr Phe Ala Leu Lys
115 120 125

Arg Met Ser Phe Gly Leu Cys Asn Ala Pro Ala Thr Phe His Arg Cys
130 135 140

Lys Met Leu Ile Phe Phe Asp Met Val Asp Asp Thr Ile Asp Ala Phe
145 150 155 160

Met Asp Asp Phe Ser Leu Val Gly Glu Ser Phe Glu Arg Cys Leu Asn
165 170 175

His Leu Ser Asp Val Leu Lys Arg Cys Glu Asp Cys Asn Leu Val Leu
180 185 190

Asn Trp Glu Lys Cys His Phe Met Val Lys Lys Gly Ile Val Leu Gly
195 200 205

His Arg Ile Pro Glu Lys Gly Ile Glu Val Asp Arg Ala Lys Val Glu
210 215 220

Val Ile Glu Arg Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser
225 230 235 240

Phe Leu Gly His Ala Ser Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr
245 250 255

Lys Val

<210> 104
<211> 761
<212> DNA
<213> Solanum tuberosum

<400> 104
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gagaagaatg aggtaatccc cacaagaaca gtgactgggt gacggatttg catggactac 180
atgaagttga acgacgccac cagaaaggac cattatccgg tacctttcat tgataaaata 240
ttggataggt tggcaggaca tgagtactat tgttttcttg gtgtctactc aggttacaat 300
cagattgtta ttgcaataga ggactaggtg aaaaccacct tcacctgttc gtatggcaca 360
tatgcgttca agcacatgcc attcggcttg tgcaatgccc tggccacatt tcagagatgc 420
atgttggcaa tcttccatga tatggtggag gattttgttg aagttttcat ggatgacttc 480
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attgtgttgg gacacaagat ctccaaaaat gggctgaaag ttgacaaagc caacgtagag 660
gttattgaga aattgccacc cccatcacag tgaaggtaat taaaagctta ctaggacatg 720
cttggtttta tacgaggttc atcaaagact tcacaaaggt t 761

<210> 105
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 105
Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ala Arg Ile Val Tyr Pro
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Ile Ser Asp Ser Lys Trp Val Ser Pro Val Lys Cys Val Pro Lys Lys
20 25 30
Gly Arg Met Thr Val Leu Thr Asn Glu Lys Asn Glu Val Ile Pro Thr
35 40 45
Arg Thr Val Thr Gly Glx Arg Ile Cys Met Asp Tyr Met Lys Leu Asn
50 55 60
Asp Ala Thr Arg Lys Asp His Tyr Pro Val Pro Phe Ile Asp Lys Ile

65	70	75	80
Leu Asp Arg Leu Ala Gly His Glu Tyr Tyr Cys Phe Leu Gly Val Tyr			
85	90	95	
Ser Gly Tyr Asn Gln Ile Val Ile Ala Ile Glu Asp Glx Val Lys Thr			
100	105	110	
Thr Phe Thr Cys Ser Tyr Gly Thr Tyr Ala Phe Lys His Met Pro Phe			
115	120	125	
Gly Leu Cys Asn Ala Leu Ala Thr Phe Gln Arg Cys Met Leu Ala Ile			
130	135	140	
Phe His Asp Met Val Glu Asp Phe Val Glu Val Phe Met Asp Asp Phe			
145	150	155	160
Leu Val Phe Gly Glu Ser Phe Glu Leu Cys Leu Thr Asn Phe Asp Arg			
165	170	175	
Phe Leu Ala Arg Cys Glu Glu Thr Asn Leu Val Ile Asn Glx Glx Lys			
180	185	190	
Cys His Phe Leu Val Arg Glu Gly Ile Val Leu Gly His Lys Ile Ser			
195	200	205	
Lys Asn Gly Leu Lys Val Asp Lys Ala Asn Val Glu Val Ile Glu Lys			
210	215	220	
Leu Pro Pro Pro Ile Thr Val Lys Val Ile Lys Ser Leu Leu Gly His			
225	230	235	240
Ala Trp Phe Tyr Thr Arg Phe Ile Lys Asp Phe Thr Lys Val			
245	250		

<210> 106

<211> 760

<212> DNA

<213> Solanum tuberosum

<400> 106

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gaaaaaatg agttgattcc aaccaggaca gtgacagggt ggcgaatatg catggattat 180
aggaaattga atgaggccac cagaaaggat cactgcccgg ttccttttat tgatcagatg 240
ctggacaggt tagttgggca agaataattat tgtttcctgg aaggctattc aggatacaac 300
caaattgtga ttgcaccaga ggaccaggag aaaactacat tcacttgtct gtatgggaca 360

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atgatggcta tctttcatga tatggttgaa gattttgtgg agatattcat ggatgacttc 480
tcagtcttta gggagtcttt tgataggtgt ttggagaatt gggacagggt gctggctaga 540
tgcgaggaaa ctaatctcat cctaaactgg aaaaaatgctc atttcctagt aaatgaaggg 600
attgtattgg gccataaggt gtcaaagaga gggctggaag ttgatcgtgc caaagtggaa 660
gttattgaaa aactacctcc tccaatctgt taaaggggtg agaagcttcc tgggtcatgc 720
tggtttttac aggagattta taaaggactt cacaaggtt 760

<210> 107

<211> 254

<212> PRT

<213> Solanum tuberosum

<400> 107

Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Val Tyr Pro
1 5 10 15

Ile Ser Glu Ser Lys Trp Val Ser Pro Val Glx Cys Val Pro Lys Lys
20 25 30

Arg Gly Met Pro Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45

Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60

Glu Ala Thr Arg Lys Asp His Cys Pro Val Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Asp Arg Leu Val Gly Gln Glu Tyr Tyr Cys Phe Leu Glu Gly Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glu Asp Gln Glu Lys Thr
100 105 110

Thr Phe Thr Cys Leu Tyr Gly Thr Tyr Ala Phe Lys Glx Leu Pro Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Glx Met Met Ala Ile
130 135 140

Phe His Asp Met Val Glu Asp Phe Val Glu Ile Phe Met Asp Asp Phe
145 150 155 160

Ser Val Phe Arg Glu Ser Phe Asp Arg Cys Leu Glu Asn Trp Asp Arg
165 170 175

Val Leu Ala Arg Cys Glu Glu Thr Asn Leu Ile Leu Asn Trp Lys Lys
180 185 190

Cys His Phe Leu Val Asn Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205

Lys Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 108
<211> 761
<212> DNA
<213> Solanum tuberosum

<400> 108
gtgcgtaaag aggttttcaa gctctggatg caggtattgt ctatccaatt tcagacagca 60
agtgggtcag tccagttcag tgtgtgccta aaaagggagg catgacgggtg atcactaatg 120
aaaaaaatga gttgattcca accaggacag tgacaggatg gcgaatatgc atggattaca 180
gaaaattaaa tgaagctacc agaaaggatc actaccgggt tcctttttatt gatcagatgc 240
tggaacaggtt ggctggacaa gaatattatt gtttcttggg tggttattca ggatacaacc 300
aaatagtgat tgcaccagag gaccagggga aaactacatt cacttgcttg tatgggacat 360
atgtttccaa gagaatgtcg tttgggctat gcaatgctcc atccattttc caaagatgca 420
tgatggccat cttccatgat aagggttgaag attttatgga aatattcatg gatgacttct 480
cagtatttgg ggagtctttt gacaggtgct tggagaattt agacagagtg ttggctagat 540
gcgaggaaac taattttgtc ctaaactggg aaaaatgtca tttcctagtg aaggaaggga 600
ttgtgttggg tcataagggtg tcaaagagag ggctggaagt tgatcgtgcc agagtggaaa 660
taatcaaaaa gctacctccc ccaatttctg ttaaaggggt gcgaagtttt ttgggtcatg 720
ttagtttcta cgaaagattc ataaaggact tcaccaaggt t 761

<210> 109
<211> 254
<212> PRT
<213> Solanum tuberosum

<400> 109
Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Pro
1 5 10 15
Ile Ser Asp Ser Lys Trp Val Ser Pro Val Gln Cys Val Pro Lys Lys
20 25 30

Gly Gly Met Thr Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45

Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Arg Lys Leu Asn
50 55 60

Glu Ala Thr Arg Lys Asp His Tyr Pro Val Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Asp Arg Leu Ala Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glu Asp Gln Gly Lys Thr
100 105 110

Thr Phe Thr Cys Leu Tyr Gly Thr Tyr Val Ser Lys Arg Met Ser Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ser Ile Phe Gln Arg Cys Met Met Ala Ile
130 135 140

Phe His Asp Lys Val Glu Asp Phe Met Glu Ile Phe Met Asp Asp Phe
145 150 155 160

Ser Val Phe Gly Glu Ser Phe Asp Arg Cys Leu Glu Asn Leu Asp Arg
165 170 175

Val Leu Ala Arg Cys Glu Glu Thr Asn Phe Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Leu Val Lys Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205

Lys Arg Gly Leu Glu Val Asp Arg Ala Arg Val Glu Ile Ile Lys Lys
210 215 220

Leu Pro Pro Pro Ile Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240

Val Ser Phe Tyr Glu Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 110

<211> 762

<212> DNA

<213> Solanum tuberosum

<400> 110

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gaaaagaagg agttgatttc agctagaacg gtgatagagt ggcacatatg aatggactat 180
aggagactaa atgaggcaac tagaaaggaa cactaccag ttcctttcat tgatcaaata 240
ttggacaggt ttattgggca agagtattat tgtttcctag atggctattc aggatataat 300
caaattgtga ttgcgccata agataaagag aaaactacat ttacttctct atatgggaca 360
tatgccttca agagaatgtc gtttgggccg tgcaatgtc caaccacatt ccaaagatgc 420
atgacagcca tttttcatga tatggtcaaa tttttgtgg agatattcat ggatgaattc 480
ttagtctttg gggagtcttt tgacacgtgt ctagaatatt tggacaatgt gcttgccaga 540
tgtgaggaaa ctaatcccg cctcaactgg gaaaaatgtc attttctagt gaagaagggg 600
attgtactag gccacaaggt ttcagaggaa ggactggaag ttgatcgtgg aaaagtagag 660
gtaatttaaa agtaccccc tcaagtcttc gttaaagggg tgagaagggt ccttggtcat 720
tctaggttcg aatgagatt cataaaagac ttcacaaaag tt 762
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<210> 111

<211> 254

<212> PRT

<213> Solanum tuberosum

<400> 111

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Val Arg Lys Glu Val Leu Lys Leu Ser Asp Ala Gly Ile Val Tyr Pro
  1             5             10            15

Ile Tyr Asp Ile Lys Trp Ile Ser Pro Val His Cys Val Pro Lys Lys
 20             25            30

Gly Gly Met Thr Ile Ile Thr Asn Glu Lys Lys Glu Leu Ile Ser Ala
 35             40            45

Arg Thr Val Ile Glu Trp His Ile Glx Met Asp Tyr Arg Arg Leu Asn
 50             55            60

Glu Ala Thr Arg Lys Glu His Tyr Pro Val Pro Phe Ile Asp Gln Met
 65             70            75            80

Leu Asp Arg Phe Ile Gly Gln Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
 85             90            95

Ser Gly Tyr Asn Gln Ile Val Ile Ala Pro Glx Asp Lys Glu Lys Thr
100            105            110

Thr Phe Thr Ser Leu Tyr Gly Thr Tyr Ala Phe Lys Arg Met Ser Phe
115            120            125

Gly Pro Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Met Thr Ala Ile
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130	135	140
Phe His Asp Met Val Lys Tyr Phe Val Glu Ile Phe Met Asp Glu Phe		
145	150	155 160
Leu Val Phe Gly Glu Ser Phe Asp Thr Cys Leu Glu Tyr Leu Asp Asn		
	165	170 175
Val Leu Ala Arg Cys Glu Glu Thr Asn Pro Val Leu Asn Trp Glu Lys		
	180	185 190
Cys His Phe Leu Val Lys Lys Gly Ile Val Leu Gly His Lys Val Ser		
	195	200 205
Glu Glu Gly Leu Glu Val Asp Arg Gly Lys Val Glu Val Ile Glx Lys		
	210	215 220
Leu Pro Pro Gln Val Phe Val Lys Gly Val Arg Arg Phe Leu Gly His		
	225	230 235 240
Ser Arg Phe Glu Met Arg Phe Ile Lys Asp Phe Thr Lys Val		
	245	250

<210> 112
 <211> 762
 <212> DNA
 <213> Solanum tuberosum

<400> 112
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 gaaaagaatg agctgattcc aaccaggaca gtgacagggg ggcgaatatg catggattat 180
 atgaagtga atgaggccac cagaaaggat cactaccga ttcattttat tgatcagatg 240
 ttggacaagt tagctgagta aaaatattat tgtttcttgg cttgttattc aagatacaac 300
 caatttctca ttgcaccaca ggaccaggag gaaactacat tcaattgtcc ttatgggaca 360
 tatgctttca agcgaatgtc gtttgggcta tgcaatgctc caaccacctt ccaaagatgc 420
 ataagggcta tctttcatga tatggttgaa gattttgtgg agatattcat ggatgacttc 480
 tcagtctttg ggtagtcttt tgagaggtgt ctggaaaatt ttgacagggg gctggctgta 540
 tgcgaggaaa ctaatttttt cctaaactgg gaaaaatgct attttctagt gaagggaagg 600
 attgtattgg gacataaggt gtcaaagtga aggcttgaag ttgatcgtgc caaagtggaa 660
 gtcgttgaaa acctaccttc ccattctct gttaaagggg tgagaagttt tttgggtcat 720
 gctggtttct ataggagatt tatcaaagac ttcactaagg tt 762

<210> 113
 <211> 254
 <212> PRT

<213> Solanum tuberosum

<400> 113

Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Ile Val Tyr Gln
1 5 10 15

Ile Ser Asp Ser Lys Gly Val Tyr Pro Ile Glx Phe Val Pro Lys Lys
20 25 30

Cys Ser Met Thr Val Ile Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45

Arg Thr Val Thr Gly Trp Arg Ile Cys Met Asp Tyr Met Lys Leu Asn
50 55 60

Glu Ala Thr Arg Lys Asp His Tyr Pro Ile His Phe Ile Asp Gln Met
65 70 75 80

Leu Asp Lys Leu Ala Glu Glx Lys Tyr Tyr Cys Phe Leu Ala Cys Tyr
85 90 95

Ser Arg Tyr Asn Gln Phe Leu Ile Ala Pro Gln Asp Gln Glu Glu Thr
100 105 110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Phe Lys Arg Met Ser Phe
115 120 125

Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Ile Arg Ala Ile
130 135 140

Phe His Asp Met Val Glu Asp Phe Val Glu Ile Phe Met Asp Asp Phe
145 150 155 160

Ser Val Phe Gly Glx Ser Phe Glu Arg Cys Leu Glu Asn Phe Asp Arg
165 170 175

Val Leu Ala Val Cys Glu Glu Thr Asn Phe Phe Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Leu Val Lys Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205

Lys Glx Arg Leu Glu Val Asp Arg Ala Lys Val Glu Val Val Glu Asn
210 215 220

Leu Pro Ser Pro Phe Ser Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 114
 <211> 793
 <212> DNA
 <213> Solanum tuberosum

<400> 114
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 tacagggatt gtgtacccaa tatctgacaa taaatgggca agtccagtgc agtgtgtgcc 120
 taaaaagga ggaatgacag ttgtgaccaa tgagaaaaat gagttgatcc ccacaagaac 180
 agtaactggg tggaggctat gcatggacta cagaaaactc aatgaagcca ccaggaagga 240
 ccactattcg gtaccgttca ttgatcaaat gttagacagg ttggctggcc aagagtatta 300
 ctgtttcctt gatggttatt caaggataaa ttagatcgtc attgcacctg aggatcaaga 360
 gaatacgaca ttcacttgcc catatggcac gtatgcattc aaacgcttgc cattcggctt 420
 gtgcaatgcc ccaaccctat ttcagagatg tatgatggca atcttccatg atatggtgga 480
 agattttgtt aaagtataca tggacgattt ctcggtgttt ggtgagtcgt tcgaactttg 540
 tttatcta at cgtgatagag ttcttactag gtgtgaggag accaatttgg tgctgaactg 600
 ggagaagtgt cactttctgg tcagagaagg aattatgttg gggcagaaga tctccaaaag 660
 tgggctagaa gtagacaagg cgaaggtgga agtgattgag aagttgccac caccaatata 720
 agtaaagga gtgcgaagct tccttgga tgctggtttt tacaagaggt tcataaagga 780
 cttttcaaag gtt 793

<210> 115
 <211> 264
 <212> PRT
 <213> Solanum tuberosum

<400> 115
 Thr Phe Val Lys Ser Leu Met Lys Asp Val Val Arg Glu Glu Val Ile
 1 5 10 15
 Lys Trp Leu Asp Thr Gly Ile Val Tyr Pro Ile Ser Asp Asn Lys Trp
 20 25 30
 Ala Ser Pro Val Gln Cys Val Pro Lys Lys Gly Gly Met Thr Val Val
 35 40 45
 Thr Asn Glu Lys Asn Glu Leu Ile Pro Thr Arg Thr Val Thr Gly Trp
 50 55 60
 Arg Leu Cys Met Asp Tyr Arg Lys Leu Asn Glu Ala Thr Arg Lys Asp
 65 70 75 80
 His Tyr Ser Val Pro Phe Ile Asp Gln Met Leu Asp Arg Leu Ala Gly

85										90					95				
Gln	Glu	Tyr	Tyr	Cys	Phe	Leu	Asp	Gly	Tyr	Ser	Arg	Tyr	Asn	Glx	Ile				
100					105					110									
Val	Ile	Ala	Pro	Glu	Asp	Gln	Glu	Asn	Thr	Thr	Phe	Thr	Cys	Pro	Tyr				
115					120					125									
Gly	Thr	Tyr	Ala	Phe	Lys	Arg	Leu	Pro	Phe	Gly	Leu	Cys	Asn	Ala	Pro				
130					135					140									
Thr	Leu	Phe	Gln	Arg	Cys	Met	Met	Ala	Ile	Phe	His	Asp	Met	Val	Glu				
145					150					155					160				
Asp	Phe	Val	Lys	Val	Tyr	Met	Asp	Asp	Phe	Ser	Val	Phe	Gly	Glu	Ser				
165					170					175									
Phe	Glu	Leu	Cys	Leu	Ser	Asn	Arg	Asp	Arg	Val	Leu	Thr	Arg	Cys	Glu				
180					185					190									
Glu	Thr	Asn	Leu	Val	Leu	Asn	Trp	Glu	Lys	Cys	His	Phe	Leu	Val	Arg				
195					200					205									
Glu	Gly	Ile	Met	Leu	Gly	Gln	Lys	Ile	Ser	Lys	Ser	Gly	Leu	Glu	Val				
210					215					220									
Asp	Lys	Ala	Lys	Val	Glu	Val	Ile	Glu	Lys	Leu	Pro	Pro	Pro	Ile	Glx				
225					230					235					240				
Val	Lys	Gly	Val	Arg	Ser	Phe	Leu	Gly	His	Ala	Gly	Phe	Tyr	Lys	Arg				
245					250					255									
Phe	Ile	Lys	Asp	Phe	Ser	Lys	Val												
260																			

<210> 116

<211> 761

<212> DNA

<213> Platanus occidentalis

<400> 116

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tagaatgatg agttggttcc taccagtgtt cagaatgggt ggaggggtgt atagattata 180
gaaaattgaa tgttgtaacc cgcaaggatc acttcccttt accttttatt gatcaaatgc 240
ttgaaagggt agttggtcat tcttactatt gtttcctaga tggttattca agttatttcc 300
agattgtaat tactccagag gattaagaaa agacaacttt tacatgtcca tttgggactt 360

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ttgcatatcg ttgcatgccc ttggccttt gcaatgcccc aaccactttc caaaggtgta 420
 tggtagcat attttcatat tacattgaga atatcataga agtttttatg gatgatttca 480
 tagtttatgg agactccttt aataattttc tgcataacct tacacttggt cttcaaagat 540
 gcatagaaac taaccttggt ttaaattatg aaaaatgtca ttttatgggt gaacaaggta 600
 tagttttggg tcatgttatt tcatctaaag gaattgaggt agataaagct aaagttgata 660
 ttattcaatc tttaaccttat ctcatagta tgcggaaagt tcattctttt cttggacatg 720
 cagggtttcta ccgaagattc attaaagact ttacaaaggt t 761

<210> 117

<211> 254

<212> PRT

<213> *Platanus occidentalis*

<400> 117

Val	Arg	Lys	Glu	Val	Phe	Lys	Leu	Leu	Lys	Val	Glx	Val	Ile	Tyr	Pro
1				5					10					15	

Ile	Glx	Asp	Arg	Asn	Trp	Val	Ser	Pro	Val	Gln	Val	Val	Pro	Lys	Lys
			20					25					30		

Ile	Gly	Ile	Thr	Val	Val	Lys	Asn	Glx	Asn	Asp	Glu	Leu	Val	Pro	Thr
	35						40					45			

Ser	Val	Gln	Asn	Gly	Trp	Arg	Val	Cys	Ile	Asp	Tyr	Arg	Lys	Leu	Asn
	50					55					60				

Val	Val	Thr	Arg	Lys	Asp	His	Phe	Pro	Leu	Pro	Phe	Ile	Asp	Gln	Met
65					70					75					80

Leu	Glu	Arg	Leu	Val	Gly	His	Ser	Tyr	Tyr	Cys	Phe	Leu	Asp	Gly	Tyr
				85					90					95	

Ser	Ser	Tyr	Phe	Gln	Ile	Val	Ile	Thr	Pro	Glu	Asp	Glx	Glu	Lys	Thr
			100					105					110		

Thr	Phe	Thr	Cys	Pro	Phe	Gly	Thr	Phe	Ala	Tyr	Arg	Cys	Met	Pro	Phe
		115					120					125			

Gly	Leu	Cys	Asn	Ala	Pro	Thr	Thr	Phe	Gln	Arg	Cys	Met	Val	Ser	Ile
	130						135				140				

Phe	Ser	Tyr	Tyr	Ile	Glu	Asn	Ile	Ile	Glu	Val	Phe	Met	Asp	Asp	Phe
145						150				155					160

Ile	Val	Tyr	Gly	Asp	Ser	Phe	Asn	Asn	Phe	Leu	His	Asn	Leu	Thr	Leu
				165					170					175	

Val Leu Gln Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Tyr Glu Lys
180 185 190

Cys His Phe Met Val Glu Gln Gly Ile Val Leu Gly His Val Ile Ser
195 200 205

Ser Lys Gly Ile Glu Val Asp Lys Ala Lys Val Asp Ile Ile Gln Ser
210 215 220

Leu Pro Tyr Leu Ile Ser Met Arg Lys Val His Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 118
<211> 762
<212> DNA
<213> Platanus occidentalis

<400> 118
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cagaatgatg agttagttcc taccatggt cagaatgggt ggtgggtttg tataaattat 180
agaaaattaa atgttataac ctgcaaggat cacttcctt taccttttat tgataaaatg 240
cttgaaagggt tagctgggtca ttcttactat tgtttccttg atggttatatt aggttatattt 300
caaattgcaa ttacttcgga ggatcaagaa aagatgattt ttaagtgcc attcgggact 360
tttgcatatc gtcacatgcc ctttggcctt tgcaatgcc caaccacttt ctaaagggtg 420
atggtttagca tattttcaga ttacattgag aatatcatag aagtctttat ggatgatttc 480
acagtttatg gagactcctt tgataattgt ctgcataacc ttacattgt tattcaaaga 540
tgcatagaaa ctaacctagt gttaaattct taaaaatgtc attttatggg tgaacaagg 600
atagttttgg gtcattgtgt ttcatctagg ggaattgagg tagataaacc taaagttgat 660
attattcaaa ctttacctta ttccactagt gtgcgagaag ttcgttcttt tcttggacat 720
gtaggttttt actgaagatt cataaaagac ttcacaaagg tt 762

<210> 119
<211> 254
<212> PRT
<213> Platanus occidentalis

<400> 119
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Val Gly Val Ile Tyr Leu
1 5 10 15

Ile Ser Asn Ser Asn Trp Val Ser Pro Val Gln Val Ala Pro Lys Lys
20 25 30

Thr Gly Ile Thr Val Val Lys Asn Gln Asn Asp Glu Leu Val Pro Thr
 35 40 45

His Val Gln Asn Gly Trp Trp Val Cys Ile Asn Tyr Arg Lys Leu Asn
 50 55 60

Val Ile Thr Cys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Lys Met
 65 70 75 80

Leu Glu Arg Leu Ala Gly His Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
 85 90 95

Leu Gly Tyr Phe Gln Ile Ala Ile Thr Ser Glu Asp Gln Glu Lys Met
 100 105 110

Ile Phe Lys Cys Pro Phe Gly Thr Phe Ala Tyr Arg His Met Pro Phe
 115 120 125

Gly Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Cys Met Val Ser Ile
 130 135 140

Phe Ser Asp Tyr Ile Glu Asn Ile Ile Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Thr Val Tyr Gly Asp Ser Phe Asp Asn Cys Leu His Asn Leu Thr Leu
 165 170 175

Val Ile Gln Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Ser Glx Lys
 180 185 190

Cys His Phe Met Val Glu Gln Gly Ile Val Leu Gly His Val Val Ser
 195 200 205

Ser Arg Gly Ile Glu Val Asp Lys Pro Lys Val Asp Ile Ile Gln Thr
 210 215 220

Leu Pro Tyr Ser Thr Ser Val Arg Glu Val Arg Ser Phe Leu Gly His
 225 230 235 240

Val Gly Phe Tyr Glx Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 120

<211> 759

<212> DNA

<213> Platanus occidentalis

<400> 120

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caaatgatga attgattcca aatagactca ctattggttg gcgtgtatgc attaactata 180
agaagttgaa ctcaagtact aggaaggacc atttcccttt accattcatg actaaatcct 240
agaaagggtg gctggtcaca aattttatta tttcctatat ggttattcta gatataacta 300
aatagagatt gcacctgagg actaagaaaa taccactttt acatgtccat ttggcacttt 360
tgcttatcga aggatgtcat ttggattatg taatgctctt gccacgttct aaagatgcat 420
gttgagtata tttagtata tggtagaaca ttttcttgag gtgtttatgg attttttttg 480
tttttggtaa ttcatttgat gattgtttgc ataatttgaa aaaagtgtta aatagatgtg 540
aaggaaaaaa acatcatttt gaattgagag aagtgtcatt tcatgggtctc taaaagaatt 600
gtacttggtc acattgtctc ctcccaagga attaaagtgg tcaaagccaa aattgaattg 660
atagtcaatt tgcctagccc aaagactctt aaagacattc gatcttttct aggtcatgca 720
ggatttaaca aaaggttcat caaagacttc acgaaagtt 759
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<210> 121

<211> 254

<212> PRT

<213> *Platanus occidentalis*

<400> 121

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Val Arg Lys Glu Val Phe Lys Leu Leu Asp Val Gly Ile Ile Tyr Pro
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Ile Phe Tyr Ser Asn Glx Val Ser Pro Thr Gln Val Val Pro Lys Asn
      20             25             30

Ser Gly Val Thr Val Val Lys Asn Ala Asn Asp Glu Leu Ile Pro Asn
      35             40             45

Arg Leu Thr Ile Gly Trp Arg Val Cys Ile Asn Tyr Lys Lys Leu Asn
      50             55             60

Ser Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Glx Ile
      65             70             75             80

Leu Glu Arg Val Ala Gly His Lys Phe Tyr Tyr Phe Leu Tyr Gly Tyr
      85             90             95

Ser Arg Tyr Asn Glx Ile Glu Ile Ala Pro Glu Asp Glx Glu Asn Thr
      100            105            110

Thr Phe Thr Cys Pro Phe Gly Thr Phe Ala Tyr Arg Arg Met Ser Phe
      115            120            125

Gly Leu Cys Asn Ala Leu Ala Thr Phe Glx Arg Cys Met Leu Ser Ile
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130	135	140
Phe Ser Asp Met Val Glu His Phe Leu Glu Val Phe Met Asp Asp Phe		
145	150	155 160
Phe Val Phe Gly Asn Ser Phe Asp Asp Cys Leu His Asn Leu Lys Lys		
	165	170 175
Val Leu Asn Arg Cys Glu Glu Lys Asn Ile Ile Leu Asn Glx Glu Lys		
	180	185 190
Cys His Phe Met Val Ser Lys Arg Ile Val Leu Gly His Ile Val Ser		
	195	200 205
Ser Gln Gly Ile Lys Val Val Lys Ala Lys Ile Glu Leu Ile Val Asn		
	210	215 220
Leu Pro Ser Pro Lys Thr Leu Lys Asp Ile Arg Ser Phe Leu Gly His		
	225	230 235 240
Ala Gly Phe Asn Lys Arg Phe Ile Lys Asp Phe Thr Lys Val		
	245	250

<210> 122

<211> 761

<212> DNA

<213> *Platanus occidentalis*

<400> 122

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aaaatgatga gttagtctct acccgtgttc agaatgggtg gcaggtttgt atagattata 180
taaaattaaa tgttgtaacc cgcaaggatc acttcccttt accttttatt gatcaaagt 240
ttgaaagggt agctggatcat tcttactatt gtttccttga tggatattca tgttattttt 300
agattgcaat tactccagag gatcaagaaa agacgacttt tacgtgccca ttcgggactt 360
tttcatatcg ttgcatgccc tttggccttt gcaacgcccc agccactttc caaagggtgta 420
tggttagcat attttcagat tacattgaga atatcataga agtctttatg gatgatttca 480
tagtttatga agactccttt gataattgtc tgcataacct tacacttggt ttttaaagat 540
gcatagaaac taaccttggt ttaaattttg aaaaatgtca tgttatgggt gaataaggta 600
tagttttggg tcatgttggt tcatctatgg gaattgaggt agataaagtt aaagttgata 660
ttattcaatc ttaccttat ccattagtg tgcaggaagt tcgttctttt cttggacatg 720
cgggttttta ccaaagattc attaaagact tcacgaaagt t 761

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<210> 123

<211> 253

<212> PRT

<213> Platanus occidentalis

<400> 123

Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Val Ile Tyr Pro Ile
1 5 10 15

Ser Asp Ser Asn Trp Val Ser Pro Val Gln Val Val Pro Lys Lys Thr
20 25 30

Gly Ile Thr Val Val Lys Asn Gln Asn Asp Glu Leu Val Pro Thr Arg
35 40 45

Val Gln Asn Gly Trp Gln Val Cys Ile Asp Tyr Ile Lys Leu Asn Val
50 55 60

Val Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met Phe
65 70 75 80

Glu Arg Leu Ala Gly His Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr Ser
85 90 95

Cys Tyr Phe Glx Ile Ala Ile Thr Pro Glu Asp Gln Glu Lys Thr Thr
100 105 110

Phe Thr Cys Pro Phe Gly Thr Phe Ser Tyr Arg Cys Met Pro Phe Gly
115 120 125

Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Val Ser Ile Phe
130 135 140

Ser Asp Tyr Ile Glu Asn Ile Ile Glu Val Phe Met Asp Asp Phe Ile
145 150 155 160

Val Tyr Glu Asp Ser Phe Asp Asn Cys Leu His Asn Leu Thr Leu Val
165 170 175

Phe Glx Arg Cys Ile Glu Thr Asn Leu Val Leu Asn Phe Glu Lys Cys
180 185 190

His Val Met Val Glu Glx Gly Ile Val Leu Gly His Val Val Ser Ser
195 200 205

Met Gly Ile Glu Val Asp Lys Val Lys Val Asp Ile Ile Gln Ser Leu
210 215 220

Pro Tyr Pro Ile Ser Val Gln Glu Val Arg Ser Phe Leu Gly His Ala
225 230 235 240

Gly Phe Tyr Gln Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 124
 <211> 761
 <212> DNA
 <213> Sorghum bicolor

<400> 124
 gtgcgtaaag aggtcttcaa gctctatcat gctgggatta tttatcctgt gccgcatagt 60
 gagtgggtta gccctgttca agtagtgcca aagaaaggag gaatgacggt cgtaggaat 120
 gagaagaatg aactcatccc tcaacgaatt gtcactgggt ggcgtatgtg tattgactat 180
 caaaaactca acacggctac aaagaaagat aactttccgt tacccttcat tgatgaaatg 240
 ttggaacggc ttgcaaacca ctctttcttc tgtttccttg atggttattc tggatatcac 300
 caaatcccaa tccaccaga tgaccaagaa aagactacct ttacatgccc gtatggaact 360
 tatgcataac gacgaatgtc gttcggactg tgcaatgtc cagcttcttt ccaacgggtgc 420
 atgatgtcta ttttctcgga catgattgag aagatcatgg aggttttcat ggatgatttt 480
 accgtctatg gtaaaacctt cgatcattgt ttggagaatt tagatagagt cttgcagcga 540
 tgtgaagaaa agcacttaat cctgaactgg gagaaatgcc attttatggg tcaggaagga 600
 atagtgttag gacataaagt gtccgaacgt ggtatagagg tggacaaagc aaagattgaa 660
 gttattgaaa aacttcacc tcccacgaat gtgaaaggat ccgtagcttc ttgggacatg 720
 cagggttcta tagatgcttc ataaaagact tcacaaaggt t 761

<210> 125
 <211> 254
 <212> PRT
 <213> Sorghum bicolor

<400> 125
 Val Arg Lys Glu Val Phe Lys Leu Tyr His Ala Gly Ile Ile Tyr Pro
 1 5 10 15
 Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
 20 25 30
 Gly Gly Met Thr Val Val Arg Asn Glu Lys Asn Glu Leu Ile Pro Gln
 35 40 45
 Arg Ile Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
 50 55 60
 Thr Ala Thr Lys Lys Asp Asn Phe Pro Leu Pro Phe Ile Asp Glu Met
 65 70 75 80
 Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Glu Lys Thr
 100 105 110
 Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Glx Arg Arg Met Ser Phe
 115 120 125
 Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
 130 135 140
 Phe Ser Asp Met Ile Glu Lys Ile Met Glu Val Phe Met Asp Asp Phe
 145 150 155 160
 Thr Val Tyr Gly Lys Thr Phe Asp His Cys Leu Glu Asn Leu Asp Arg
 165 170 175
 Val Leu Gln Arg Cys Glu Glu Lys His Leu Ile Leu Asn Trp Glu Lys
 180 185 190
 Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Val Ser
 195 200 205
 Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Lys
 210 215 220
 Leu Pro Pro Pro Thr Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240
 Ala Gly Phe Tyr Arg Cys Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 126

<211> 762

<212> DNA

<213> Sorghum bicolor

<400> 126

gtgcggaagg aggtccttaa attgctgcat gcagggatta tatatcctgt gccgcacagt 60
 gagtgggtga gcccagtaca agttgtgcct aaaaaaggag gcatgactgt tattataaat 120
 gaaaagaacg agctaattcc gcaacgcacc gtcacaggat ggcagatgtg catagactat 180
 agaaaactaa acaaagccac gagaaaggat cactttcctt taccttttat agatgagatg 240
 ctagagcggg tagcaaacca ttcgttcttc tgtttcttag atggatatcc agggatatcat 300
 cagatccccga tccatccccga tgatcaaagc aaaccactt ttacatgccc ttatggaact 360
 tatgcttacc gtagaatgtc ttttgggtta tgtaatgcac cagcttcttt tcaaagatgc 420
 atgatgtcta tttttctga tatgattgaa gagattatgg aagttttcat ggatgatttc 480
 tctgtttatg gaaaagcttt tgatagttgt cttgaaaact tagacaagg tttgcaaagt 540
 tgtgaagaaa agcacttaat ccttaattgg gaaaaatgtc attttatggt tagggaagga 600

atagtgctag gacacttagt gtctgaaagg ggtattgagg tagacaaagc tgaaattgaa 660
 gtaattgaac aactacctcc acctgtgaat ataaaaggaa ttcgaagctt tcttggccat 720
 gctgggtttt atcgtagatt catcaaagat ttcacgaaag tt 762

<210> 127

<211> 254

<212> PRT

<213> Sorghum bicolor

<400> 127

Val Arg Lys Glu Val Leu Lys Leu Leu His Ala Gly Ile Ile Tyr Pro
 1 5 10 15

Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
 20 25 30

Gly Gly Met Thr Val Ile Ile Asn Glu Lys Asn Glu Leu Ile Pro Gln
 35 40 45

Arg Thr Val Thr Gly Trp Gln Met Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60

Lys Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
 65 70 75 80

Leu Glu Arg Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Ser Lys Thr
 100 105 110

Thr Phe Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
 115 120 125

Gly Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
 130 135 140

Phe Ser Asp Met Ile Glu Glu Ile Met Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Tyr Gly Lys Ala Phe Asp Ser Cys Leu Glu Asn Leu Asp Lys
 165 170 175

Val Leu Gln Ser Cys Glu Glu Lys His Leu Ile Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser

195	200	205
Glu Arg Gly Ile Glu Val Asp Lys Ala Glu Ile Glu Val Ile Glu Gln		
210	215	220
Leu Pro Pro Pro Val Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His		
225	230	235
		240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 128
 <211> 762
 <212> DNA
 <213> Sorghum bicolor

<400> 128

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gtgcggaagg aagtcttaaa gcttttacac actaggatta tttatctcgt tcctcatagt 60
gagtgggtta gcacggtaca agttgtgcca aagaaaggag gaatgtcggg tgtaggaat 120
gagaagaacg aattcatccc tcaacaaact gtcactgggt ggcgtatgtg cattgactac 180
caaaaactca acaaggccac aaggaaagat cacttcccgt tacctttcat tgatgaaatg 240
ttgtaatggc ttacaaatca ctcgttcttt tgtttccttg aagggtattc cagatatcat 300
caaatcccga tccaccacga tgaccaaagt aagactactt tcacatgacc ctatggaact 360
tacgcatacc gacgaatgtc gttcagggtta tgtaatgtc cagcttcttt tcaacgggtgc 420
atgatgtcta ttttttccaa tatgattgag aaaatcatgg aggtattcac ggatgatttt 480
accgtatatg gcaaaacctt tgatgattgt ttagagaatt tggacaaagt cttacaattg 540
tgtgaaggaa agcacttaat cgtaaactag gagaaatgcc attttatggg ccgagaagga 600
atagtgtctag ggcacaaggt gtccgaacgt gggatagagg tggatagagc caagattgaa 660
gttattgaaa aacttcacc tcccacaaat gtgaaagaca tccgcagttt tcttggacat 720
gcagggttct ataggcgctt catcaaagat ttcaccaagg tt 762
  
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<210> 129
 <211> 254
 <212> PRT
 <213> Sorghum bicolor

<400> 129

Val Arg Lys Glu Val Leu Lys Leu Leu His Thr Arg Ile Ile Tyr Leu
1 5 10 15
Val Pro His Ser Glu Trp Val Ser Thr Val Gln Val Val Pro Lys Lys
20 25 30
Gly Gly Met Ser Val Val Arg Asn Glu Lys Asn Glu Phe Ile Pro Gln
35 40 45

Gln Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn
50 55 60

Lys Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met
65 70 75 80

Leu Glx Trp Leu Thr Asn His Ser Phe Phe Cys Phe Leu Glu Gly Tyr
85 90 95

Ser Arg Tyr His Gln Ile Pro Ile His His Asp Asp Gln Ser Lys Thr
100 105 110

Thr Phe Thr Glx Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe
115 120 125

Arg Leu Cys Asn Ala Pro Ala Ser Phe Gln Arg Cys Met Met Ser Ile
130 135 140

Phe Ser Asn Met Ile Glu Lys Ile Met Glu Val Phe Thr Asp Asp Phe
145 150 155 160

Thr Val Tyr Gly Lys Thr Phe Asp Asp Cys Leu Glu Asn Leu Asp Lys
165 170 175

Val Leu Gln Leu Cys Glu Gly Lys His Leu Ile Val Asn Glx Glu Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205

Glu Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Glu Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Thr Asn Val Lys Asp Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 130

<211> 761

<212> DNA

<213> Sorghum bicolor

<400> 130

gtgcgtaagg aggtttttaa gctgctgcat gcagagatta tatatcatgt gccgcacagt 60
gagtgggtaa gccagttca agttgtgcct aaaaaggag gcatgattgt tgttacgaat 120

gaaaagaacg agctaattcc gcaacgcacc gtcacagggt ggcggatgtg catagactat 180
 agaaaactaa acaaagccac gagaaaggat cattttcctt tacctttcat agatgagatg 240
 ctagagcgat tagcaaacca ttcgttcttc tgtttcttag atggataatt agggtatcac 300
 cagatcccaa tcaatcttga tgatcaaagc aaaaccactt ttccatgccc acatggaact 360
 tatgcttacc gtagaatgtc ttttgggtta tgtaatgcac cagcttcttt tcaaagatgc 420
 atgatgtctg tattttctaa tatgattgaa gagattatgg aattttcatg gatgatttct 480
 ctgtttatgg aaaaactttt gatagttgtc ttgaaaactt agacagggtt ttgcaaagat 540
 gtgaagaaaa gtacttagtc ctttaattgga aaaaatgtca ttttatgggt agggaaggaa 600
 tagtgctggg acacctagtg tctgaaagag gtattgaggt cgacaaagct aaaattgaag 660
 taattgaaca actacctcca cctttgaata taaaaggaat tcgaagcttt cttggccatg 720
 ctggttttta tcgtagattc attaaggact ttacaaaggt t 761

<210> 131

<211> 254

<212> PRT

<213> Sorghum bicolor

<400> 131

Val	Arg	Lys	Glu	Val	Phe	Lys	Leu	Leu	His	Ala	Glu	Ile	Ile	Tyr	His
1				5					10					15	

Val	Pro	His	Ser	Glu	Trp	Val	Ser	Pro	Val	Gln	Val	Val	Pro	Lys	Lys
			20					25					30		

Gly	Gly	Met	Ile	Val	Val	Thr	Asn	Glu	Lys	Asn	Glu	Leu	Ile	Pro	Gln
		35					40					45			

Arg	Thr	Val	Thr	Gly	Trp	Arg	Met	Cys	Ile	Asp	Tyr	Arg	Lys	Leu	Asn
	50					55					60				

Lys	Ala	Thr	Arg	Lys	Asp	His	Phe	Pro	Leu	Pro	Phe	Ile	Asp	Glu	Met
65					70					75				80	

Leu	Glu	Arg	Leu	Ala	Asn	His	Ser	Phe	Phe	Cys	Phe	Leu	Asp	Gly	Glx
			85						90					95	

Leu	Gly	Tyr	His	Gln	Ile	Pro	Ile	Asn	Leu	Asp	Asp	Gln	Ser	Lys	Thr
		100						105					110		

Thr	Phe	Pro	Cys	Pro	His	Gly	Thr	Tyr	Ala	Tyr	Arg	Arg	Met	Ser	Phe
		115				120						125			

Gly	Leu	Cys	Asn	Ala	Pro	Ala	Ser	Phe	Gln	Arg	Cys	Met	Met	Ser	Val
	130					135						140			

Phe	Ser	Asn	Met	Ile	Glu	Glu	Ile	Met	Glu	Ile	Phe	Met	Asp	Asp	Phe
145				150					155					160	

Ser Val Tyr Gly Lys Thr Phe Asp Ser Cys Leu Glu Asn Leu Asp Arg
165 170 175

Val Leu Gln Arg Cys Glu Glu Lys Tyr Leu Val Leu Asn Trp Lys Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser
195 200 205

Glu Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Gln
210 215 220

Leu Pro Pro Pro Leu Asn Ile Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 132

<211> 763

<212> DNA

<213> Sorghum bicolor

<400> 132

gtgcggaaag aggtcgtcaa gctctatcat gctgggatta tttatcctgt gccacatagt 60
gagtgggtta gccctgttca agtagtgcca aagaaagaag gaatgacggt cgtaggaat 120
gagaagaatg aactcatccc tcaacaaatt gtcactagat ggcgatgtg tattgactat 180
cgaaaactca acaaagctac aaagaaagat cactttccgt tacccttcat tgatgaaatg 240
ttggaatggc ttgcaaacca ctctttcttc tgtttccttg atggttattc tggatatcac 300
caaatcccaa tccaccaga tgaccaagaa aagactacct ttacatgccc gtattgaact 360
tatgcatact gacgaatgtc gttcggattg tgcaatgtc tagcttcttt tccagcggtg 420
catgatgtct attttctcgg acatgattga gaagatcatg gaggttttca tggatgattt 480
taccgtctat ggcaaaacct tcgatcattg tttggagaat ttagatagag tcttgcagcg 540
atgtgaggaa aatcacttaa tcttgaactg ggagaaatgt cattttatgg ttcaggaagg 600
aatagtgcta ggacataaag tgtccgaacg tggatatagat gtggacaaag caaagattaa 660
agttattgaa aaacttcac ctcacacgaa tgtgaaagga atccatagct ttttgggaca 720
tgcagggttc tatagacgct tcatcaagga tttcacaag gtt 763

<210> 133

<211> 254

<212> PRT

<213> Sorghum bicolor

<400> 133

Val Arg Lys Glu Val Val Lys Leu Tyr His Ala Gly Ile Ile Tyr Pro

1	5	10	15
Val Pro His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys			
20	25	30	
Glu Gly Met Thr Val Val Arg Asn Glu Lys Asn Glu Leu Ile Pro Gln			
35	40	45	
Gln Ile Val Thr Arg Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn			
50	55	60	
Lys Ala Thr Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met			
65	70	75	80
Leu Glu Trp Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr			
85	90	95	
Ser Gly Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Glu Lys Thr			
100	105	110	
Thr Phe Thr Cys Pro Tyr Glx Thr Tyr Ala Tyr Glx Arg Met Ser Phe			
115	120	125	
Gly Leu Cys Asn Ala Leu Ala Ser Phe Gln Arg Cys Met Met Ser Ile			
130	135	140	
Phe Ser Asp Met Ile Glu Lys Ile Met Glu Val Phe Met Asp Asp Phe			
145	150	155	160
Thr Val Tyr Gly Lys Thr Phe Asp His Cys Leu Glu Asn Leu Asp Arg			
165	170	175	
Val Leu Gln Arg Cys Glu Glu Asn His Leu Ile Leu Asn Trp Glu Lys			
180	185	190	
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Val Ser			
195	200	205	
Glu Arg Gly Ile Asp Val Asp Lys Ala Lys Ile Lys Val Ile Glu Lys			
210	215	220	
Leu Pro Pro His Thr Asn Val Lys Gly Ile His Ser Phe Leu Gly His			
225	230	235	240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val			
245	250		

<210> 134
 <211> 756
 <212> DNA
 <213> Sorghum bicolor

<400> 134
 aaggaggttt tcaagttgct gcatgcaggg attatatatc ttgtgccgca tagtgagtgg 60
 gtaagcccag ttcaagttgt gcctaaaaag ggagggcatga ctattattat gaatgaaaag 120
 aacgagctaa ttccgcaacg caccgttaca gtatggcgga tgtgcataga ctatagaaaa 180
 ctaaacaaag ccacgagaga ggatcacttt cctttacctt tcatagatga gatgctagag 240
 tggttagcaa accattcggt cttctgtttc ttagatggat attgagggta tcatcagatc 300
 ccgatccatc ccgatgatca aagcaaaacc acttttacat gcccatatgg aacttatgct 360
 taccgtagaa tgtcttttgg gttatgtaat gcactagctt cttttcaaag atgcatgatg 420
 tctatatttt ctgatatgat tgaagagatt atggaagttt tcatggatga tttctctgtt 480
 tatggaaaaa cttttgatag ttgtcttaaa aacttagaca aggttttgca aagatgtgaa 540
 gaaaagcact tagtccttaa ttgggaaaaa tgtcatttca tggttaggga aggaatagtg 600
 ctgggacact tagtgtctga aagagctatt gaggtagata aagctaaaat tgaagtaatt 660
 gaacaactac gtccacctgt gaacataaaa ggaatttgaa gctttcttgg ccattgctgg 720
 tttcatcgta gattcataaa agactttaca aagggtt 756

<210> 135
 <211> 252
 <212> PRT
 <213> Sorghum bicolor

<400> 135
 Lys Glu Val Phe Lys Leu Leu His Ala Gly Ile Ile Tyr Leu Val Pro
 1 5 10 15
 His Ser Glu Trp Val Ser Pro Val Gln Val Val Pro Lys Lys Gly Gly
 20 25 30
 Met Thr Ile Ile Met Asn Glu Lys Asn Glu Leu Ile Pro Gln Arg Thr
 35 40 45
 Val Thr Val Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn Lys Ala
 50 55 60
 Thr Arg Glu Asp His Phe Pro Leu Pro Phe Ile Asp Glu Met Leu Glu
 65 70 75 80
 Trp Leu Ala Asn His Ser Phe Phe Cys Phe Leu Asp Gly Tyr Glx Gly
 85 90 95
 Tyr His Gln Ile Pro Ile His Pro Asp Asp Gln Ser Lys Thr Thr Phe
 100 105 110

Thr Cys Pro Tyr Gly Thr Tyr Ala Tyr Arg Arg Met Ser Phe Gly Leu
115 120 125

Cys Asn Ala Leu Ala Ser Phe Gln Arg Cys Met Met Ser Ile Phe Ser
130 135 140

Asp Met Ile Glu Glu Ile Met Glu Val Phe Met Asp Asp Phe Ser Val
145 150 155 160

Tyr Gly Lys Thr Phe Asp Ser Cys Leu Lys Asn Leu Asp Lys Val Leu
165 170 175

Gln Arg Cys Glu Glu Lys His Leu Val Leu Asn Trp Glu Lys Cys His
180 185 190

Phe Met Val Arg Glu Gly Ile Val Leu Gly His Leu Val Ser Glu Arg
195 200 205

Ala Ile Glu Val Asp Lys Ala Lys Ile Glu Val Ile Glu Gln Leu Arg
210 215 220

Pro Pro Val Asn Ile Lys Gly Ile Glx Ser Phe Leu Gly His Ala Gly
225 230 235 240

Phe His Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 136
<211> 762
<212> DNA
<213> Glycine max

<400> 136
gtgcgtaagg aggttgtaa gcttttggag gttgggctca tatacctcat ctctgacagc 60
gcttgggtaa gcctagtaca ggtggctccc aagaaatgcg gaatgacagt ggtacaaaat 120
gagaggaatg acttgatacc aacacgaact gtcactggct agcggatgtg tatcgactac 180
tgcaagttga atgaagccac acggaaggac catttcccct tacctttcat ggatcagatg 240
ctggagaggc ttgcagggca ggcatactac tgtttcttgg atagatattc aggatacaac 300
caaatcgcg tagaccccag agatcaggag aagatggcct ttacatgccc ctttggcgtc 360
tttgcttaca gaaggatgtc attcagggtta tgtaacgcac cagccacatt tcagaggtgc 420
gtgctggcca ttttttcaga catggtggag aagagcatcg aggtatttat ggatgaattc 480
tcgatttttg gacccttatt tgacagttgc ttaaggaact tagagatggg actacagagg 540
tgcgtataga ctaacttggt actaaattag gaaaaatgtc atttcatggg tcgagagggg 600
atagtgatgg accacaatat ctcagctaga gggattgagg ttgatcaggc aaagatagac 660
gtcattgaga agttgccacc accactgaat gttaaaggcg tcagaagttt cttagggcat 720
gcagggtttct acaggagggt tatcaaggac ttcaccaagg tt 762

<210> 137

<211> 254

<212> PRT

<213> Glycine max

<400> 137

Val Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Leu Ile Tyr Leu
1 5 10 15

Ile Ser Asp Ser Ala Trp Val Ser Leu Val Gln Val Ala Pro Lys Lys
20 25 30

Cys Gly Met Thr Val Val Gln Asn Glu Arg Asn Asp Leu Ile Pro Thr
35 40 45

Arg Thr Val Thr Gly Glx Arg Met Cys Ile Asp Tyr Cys Lys Leu Asn
50 55 60

Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Arg Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Met
100 105 110

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125

Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Leu Ala Ile
130 135 140

Phe Ser Asp Met Val Glu Lys Ser Ile Glu Val Phe Met Asp Glu Phe
145 150 155 160

Ser Ile Phe Gly Pro Leu Phe Asp Ser Cys Leu Arg Asn Leu Glu Met
165 170 175

Val Leu Gln Arg Cys Val Glx Thr Asn Leu Val Leu Asn Glx Glu Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Met Asp His Asn Ile Ser
195 200 205

Ala Arg Gly Ile Glu Val Asp Gln Ala Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Leu Asn Val Lys Gly Val Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 138
 <211> 763
 <212> DNA
 <213> Glycine max

<400> 138
 gtgcgtaagg aggtctttaa gttcttggag gctgggctca tatatcccat ctctaatagc 60
 acttaggtaa gcccagtaca ggtgggtccc aagaaagggtg gaatgacagt agtacagaat 120
 gagaagaatg acttgatacc aacacgaact gtcactagct ggcgaatatg catcgattat 180
 cgcaagctga atgaggccac ccggaaggac cacttcctc tacctttcat ggatcagatg 240
 ttggagagac ttgcagggca ggcgtattat tgtttcttgg atggatactc gagatataat 300
 cagattgcgg tggaccctag agaccaagag aagacgacct tcacatgccc tttttggcgt 360
 ctttgcttac agaaggatgc cattcgggtt atgtaatgca ccagccacat ttcagaggtg 420
 catgctggcc attttttcag acatggtgga gaaaaatata gaggtattca tggatgactt 480
 ttcagttttt gggccctcat ttgacagttg tttgaggaac ctagagatgg tacttttagag 540
 gtgcgtagag actaatttag tgctgaactg ggagaagtgt cattttatgg ttcgagaggg 600
 catagtcttg agccacaaga tctcagctag agggattgag gttgaccggg caaagataga 660
 cgtcatagag aagctgccac caccattgaa tattaaagg gtcagaagtt tcttagggca 720
 tgcaggattc tacaggagat tcataaagga ctttacaag gtt 763

<210> 139
 <211> 254
 <212> PRT
 <213> Glycine max

<400> 139
 Val Arg Lys Glu Val Phe Lys Phe Leu Glu Ala Gly Leu Ile Tyr Pro
 1 5 10 15
 Ile Ser Asn Ser Thr Glx Val Ser Pro Val Gln Val Val Pro Lys Lys
 20 25 30
 Gly Gly Met Thr Val Val Gln Asn Glu Lys Asn Asp Leu Ile Pro Thr
 35 40 45
 Arg Thr Val Thr Ser Trp Arg Ile Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60
 Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met

65		70		75		80
Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Gly Tyr						
	85		90		95	
Ser Arg Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Thr						
	100		105		110	
Thr Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe						
	115		120		125	
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Leu Ala Ile						
	130		135		140	
Phe Ser Asp Met Val Glu Lys Asn Ile Glu Val Phe Met Asp Asp Phe						
145		150		155		160
Ser Val Phe Gly Pro Ser Phe Asp Ser Cys Leu Arg Asn Leu Glu Met						
	165		170		175	
Val Leu Glx Arg Cys Val Glu Thr Asn Leu Val Leu Asn Trp Glu Lys						
	180		185		190	
Cys His Phe Met Val Arg Glu Gly Ile Val Leu Ser His Lys Ile Ser						
	195		200		205	
Ala Arg Gly Ile Glu Val Asp Arg Ala Lys Ile Asp Val Ile Glu Lys						
	210		215		220	
Leu Pro Pro Pro Leu Asn Ile Lys Gly Val Arg Ser Phe Leu Gly His						
225		230		235		240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val						
	245		250			

<210> 140

<211> 762

<212> DNA

<213> Glycine max

<400> 140

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gtgcgcaagg aggttttgaa gcttctagag gttgggctta tctaccccat ctccgacagc 60
gcttgggttaa gccagtcctt ggtggtgtcg aagaaagagg gcatgacagt cattcgaaat 120
gaaaagaatg acctgatacc aacacgaact gtcactagtt ggaaattatg catcgattac 180
cgcaagctca acgaagccac aaggaaagac catttccttc tacccttcac ggatcagatg 240
ttggagagac ttgcaggaca cgcttattat tgcttcttgg atgcatactt tggatataat 300
cagattgttg tagaccccaa ggatcaggag aagatggcct tcacatgccc ttttggtgtc 360

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tttgccata gacggattcc atttgggttg tgcaatgcac ctaccacatt ccaaagtgtgc 420
atgttggcca tttttgcaga tatagtggag aaaagcatcg aagtattcat ggatgacttt 480
tcagtatttg tgccctcatt agaaagtgtt ttgaagaagt tggagatggg actacaaaga 540
tgcgtagaaa caaacttagt actaaattgg gagaagtgtc acttcatggg tcgagaaggc 600
atagtcttag gccataaaat ttcgaccga ggaattgagg tagaccaaac aaagattgat 660
gtcattgaaa agttgccacc accatcaaat gttaaaggca tcaggagctt cctaggacaa 720
gccaggttct acagaagatt catcaaggac ttcacaaaag tt 762

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<210> 141
<211> 254
<212> PRT
<213> Glycine max

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<400> 141
Val Arg Lys Glu Val Leu Lys Leu Leu Glu Val Gly Leu Ile Tyr Pro
  1             5             10             15

Ile Ser Asp Ser Ala Trp Val Ser Pro Val Leu Val Val Ser Lys Lys
      20             25             30

Glu Gly Met Thr Val Ile Arg Asn Glu Lys Asn Asp Leu Ile Pro Thr
      35             40             45

Arg Thr Val Thr Ser Trp Lys Leu Cys Ile Asp Tyr Arg Lys Leu Asn
      50             55             60

Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
      65             70             75             80

Leu Glu Arg Leu Ala Gly His Ala Tyr Tyr Cys Phe Leu Asp Ala Tyr
      85             90             95

Phe Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Met
      100            105            110

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Ile Pro Phe
      115            120            125

Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Met Cys Met Leu Ala Ile
      130            135            140

Phe Ala Asp Ile Val Glu Lys Ser Ile Glu Val Phe Met Asp Asp Phe
      145            150            155            160

Ser Val Phe Val Pro Ser Leu Glu Ser Cys Leu Lys Lys Leu Glu Met
      165            170            175

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Val Leu Gln Arg Cys Val Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

Thr Arg Gly Ile Glu Val Asp Gln Thr Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Ser Asn Val Lys Gly Ile Arg Ser Phe Leu Gly Gln
225 230 235 240

Ala Arg Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 142
<211> 762
<212> DNA
<213> Glycine max

<400> 142
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tcatagggtta gtctgtttca tgggtgctctg aaaaagggag gtatgacagt gataaagaat 120
gatagagatg agttaattcc tacaagaata gttactggat ggaggatggg tattgattac 180
aagaagctaa atgaagccac caggaaagac cattaccgcg ttcccttcat ggatcaaattg 240
cttgagagac ttgcagggca atcttcctac tatttattag atggatactc gggctacaat 300
caaattgcag tggatcctca ggaccaagaa aagacagctt tcacatgtcc ttttggtgta 360
tttgcttata gccgcatgtc gttcgggttta tgtaatgcc caactacttt ccagagatgt 420
atgatggcaa tttttgctga catggtaaag aaatgtattg aagtttttat ggacgatttc 480
tctgtctttg gtgcattctt tgaaaattgc ctagcaaatt tagagaaagt gttacaacgc 540
tatgaagaat ctaatttggg gctcaactgg gaaaaatgtc actttatggg tcaagaagg 600
atcatgctgg gacacaagat ttctagaaga ggaattaagg tggataaggc aaagattgag 660
gttattgata aacttcacc tctagttaat gttagaggca tacgaagttt tttgggtcat 720
gctagattct atcgatgatt tatcaaggac ttcaccaaag tt 762

<210> 143
<211> 254
<212> PRT
<213> Glycine max

<400> 143
Val Arg Lys Glu Val Ile Lys Leu Leu Glu Ala Gly Leu Ile Tyr Leu
1 5 10 15
Ile Ser Asp Ser Ser Glx Val Ser Pro Val His Val Ala Leu Lys Lys
20 25 30

Gly Gly Met Thr Val Ile Lys Asn Asp Arg Asp Glu Leu Ile Pro Thr
 35 40 45

Arg Ile Val Thr Gly Trp Arg Met Gly Ile Asp Tyr Lys Lys Leu Asn
 50 55 60

Glu Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
 65 70 75 80

Leu Glu Arg Leu Ala Gly Gln Ser Ser Tyr Tyr Leu Leu Asp Gly Tyr
 85 90 95

Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Gln Asp Gln Glu Lys Thr
 100 105 110

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
 115 120 125

Gly Leu Cys Asn Ala Pro Thr Thr Phe Gln Arg Cys Met Met Ala Ile
 130 135 140

Phe Ala Asp Met Val Lys Lys Cys Ile Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Val Phe Gly Ala Ser Phe Glu Asn Cys Leu Ala Asn Leu Glu Lys
 165 170 175

Val Leu Gln Arg Tyr Glu Glu Ser Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Ser
 195 200 205

Arg Arg Gly Ile Lys Val Asp Lys Ala Lys Ile Glu Val Ile Asp Lys
 210 215 220

Leu Pro Pro Leu Val Asn Val Arg Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Arg Phe Tyr Arg Glx Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 144

<211> 761

<212> DNA

<213> Glycine max

<400> 144

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gtgcggaagg aggtctttaa gttgctggaa gcaggcctta tttatcccat ttcggatagt 60
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gataaagatg agttgatatc cacaaggacc gtcaccgggt ggagaatgtg cattgactat 180
cgaaagctga atgatgcacc cggaaggacc attatccact ccctttcatg ggccatatgc 240
ttgaaagact tgttgggcaa tcctattatt gttttctaga tggatattat gggtataatc 300
agattgttgt agatcccaaa gatcaagaga agacagcttt cacctaccct tttggtgtat 360
tcgcatatca gtgcatgcct tttggtctat gcaatgcccc agctacattt cagaggtgta 420
tgatggctat tttttctgat atggtggaaa tatgcattga agttttcatg gacgatttct 480
ctatTTTTTgg gccatccttt gaagggtgct tatcaaactc tgaaaaagta ttaaagagat 540
gtgaagagtc caatctagtt ctcaattgga agaaatgccca tttcatgggt caagaaggaa 600
taatgttggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg 660
taattgagaa actacttgct cccatgaatg tcaagggaat aagaagcttc ttaggacatg 720
cagggttcta caggcgattc ataaaagact tcaccaaagt t 761
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<210> 145

<211> 254

<212> PRT

<213> Glycine max

<400> 145

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Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
  1             5             10            15

Ile Ser Asp Ser Ala Trp Val Ser Pro Met Gln Val Val Pro Lys Lys
      20             25            30

Gly Gly Met Thr Val Ile Lys Asn Asp Lys Asp Glu Leu Ile Ser Thr
      35             40            45

Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
      50             55            60

Asp Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Gly His Met
      65             70            75            80

Leu Glu Arg Leu Val Gly Gln Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr
      85             90            95

Tyr Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Thr
      100            105            110

Ala Phe Thr Tyr Pro Phe Gly Val Phe Ala Tyr Gln Cys Met Pro Phe
      115            120            125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Ala Ile
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130	135	140
Phe Ser Asp Met Val Glu Ile Cys Ile Glu Val Phe Met Asp Asp Phe		
145	150	155 160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Cys Leu Ser Asn Leu Glu Lys		
	165	170 175
Val Leu Lys Arg Cys Glu Glu Ser Asn Leu Val Leu Asn Trp Lys Lys		
	180	185 190
Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Ser		
	195	200 205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys		
	210	215 220
Leu Leu Ala Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His		
	225	230 235 240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val		
	245	250

<210> 146
 <211> 762
 <212> DNA
 <213> Glycine max

<400> 146
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 gataagaatg atcttattcc tacacagaca atcattaggt ggcaaagtgtg tattgactat 180
 cacaagttga atgatgtcac caagaaggac cattttcctc tgccattcat ggaccaaatg 240
 ttagagaggt tagctggcca agctttttat tgttttttgg atggttattc tgggtataac 300
 caaatagcgg tgcattctaa agatcaagag aagactacta tcatatgccc atttgggtgc 360
 tttgcttaca gacaaatgtc atttgaactg tgtaatgccc ctaccacctt ctagagattc 420
 atgatggcca tttttgctga ccttggtggag aaatgcatag aggtgttcat gaatgatttc 480
 tctattttcg gctcttcctt ttatcattgt ttatccaacc tgggaattagt gttacaacgg 540
 tgtgcggaaa ccaatttggt gatgaactgg gagaaatgtc atttcatggt ccaagagggg 600
 attgtcttag gccacaagat ctcttccaga ggggttgggaag tggacaaggc aaaaattgat 660
 gttattgaga agttgcctcc acctatgaat gtgaaaggca tccgaagttt tctcgaatat 720
 gttggatttt ataggagggt catcaaagac ttcacgaaag tt 762

<210> 147
 <211> 254
 <212> PRT

<213> Glycine max

<400> 147

Val Arg Lys Glu Val Val Lys Leu Leu Glu Val Gly Leu Ile Tyr Pro
1 5 10 15

Ile Ser Asp Ser Ala Trp Val Ser Ser Asn Glx Val Val Pro Lys Lys
20 25 30

Gly Gly Met Thr Val Ile His Asn Asp Lys Asn Asp Leu Ile Pro Thr
35 40 45

Gln Thr Ile Ile Arg Trp Gln Met Cys Ile Asp Tyr His Lys Leu Asn
50 55 60

Asp Val Thr Lys Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ala Gly Gln Ala Phe Tyr Cys Phe Leu Asp Gly Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Ala Val His Leu Lys Asp Gln Glu Lys Thr
100 105 110

Thr Ile Ile Cys Pro Phe Gly Val Phe Ala Tyr Arg Gln Met Ser Phe
115 120 125

Glu Leu Cys Asn Ala Pro Thr Thr Phe Glx Arg Phe Met Met Ala Ile
130 135 140

Phe Ala Asp Leu Val Glu Lys Cys Ile Glu Val Phe Met Asn Asp Phe
145 150 155 160

Ser Ile Phe Gly Ser Ser Phe Tyr His Cys Leu Ser Asn Leu Glu Leu
165 170 175

Val Leu Gln Arg Cys Ala Glu Thr Asn Leu Leu Met Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

Ser Arg Gly Leu Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Glu Tyr
225 230 235 240

Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 148
 <211> 762
 <212> DNA
 <213> Glycine max

<400> 148
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 gcttgggtaa gcctagtaca ggtggctccc aagaaatgcg gaatgacagt ggtacaaaat 120
 gagaggaatg acttgatacc aacacgaact gtcactggct agcggatgtg tatcgactac 180
 tgcaagttga atgaagccac acggaaggac catttcccct tacctttcat ggatcagatg 240
 ctggagaggc ttgcagggca ggcatactac tgtttcttgg atagatattc aggatacaac 300
 caaatcgcg tagaccccag agatcaggag aagatggcct ttacatgccc ctttggcgtc 360
 tttgcttaca gaaggatgtc attcagggtta tgtaacgcac cagccacatt tcagaggtgc 420
 atgctggcca ttttttcaga catggtggag aagagcatcg aggtatttat ggatgaattc 480
 tcgatttttg gacccttatt tgacagttgc ttaaggaact tagagatggg actacagagg 540
 tgcgtataga ctaacttggt actaaattag gaaaaatgtc atttcatggg tcgagagggga 600
 atagtgatgg gccacaatat ctcagctaga gggattgagg ttgatcagac aaagatagac 660
 gtcattgaga agttgccacc accactgaat gttaaaggcg tcagaagttt cttagggcat 720
 gcaggtttct acaggagggt cataaaagac ttcacaaagg tt 762

<210> 149
 <211> 254
 <212> PRT
 <213> Glycine max

<400> 149
 Val Arg Lys Glu Val Leu Lys Leu Leu Glu Val Gly Leu Ile Tyr Leu
 1 5 10 15
 Ile Ser Asp Ser Ala Trp Val Ser Leu Val Gln Val Ala Pro Lys Lys
 20 25 30
 Cys Gly Met Thr Val Val Gln Asn Glu Arg Asn Asp Leu Ile Pro Thr
 35 40 45
 Arg Thr Val Thr Gly Glx Arg Met Cys Ile Asp Tyr Cys Lys Leu Asn
 50 55 60
 Glu Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
 65 70 75 80
 Leu Glu Arg Leu Ala Gly Gln Ala Tyr Tyr Cys Phe Leu Asp Arg Tyr
 85 90 95

Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Arg Asp Gln Glu Lys Met
100 105 110

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Ser Phe
115 120 125

Arg Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Leu Ala Ile
130 135 140

Phe Ser Asp Met Val Glu Lys Ser Ile Glu Val Phe Met Asp Glu Phe
145 150 155 160

Ser Ile Phe Gly Pro Leu Phe Asp Ser Cys Leu Arg Asn Leu Glu Met
165 170 175

Val Leu Gln Arg Cys Val Glx Thr Asn Leu Val Leu Asn Glx Glu Lys
180 185 190

Cys His Phe Met Val Arg Glu Gly Ile Val Met Gly His Asn Ile Ser
195 200 205

Ala Arg Gly Ile Glu Val Asp Gln Thr Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Leu Asn Val Lys Gly Val Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 150

<211> 761

<212> DNA

<213> Glycine max

<400> 150

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gcatgggtta gccctgtgca ggttgtcccc aagaaagaag gtaagacagt cattaaggat 120
gaaaaggatg agttgatatc cacaaggact atcacggggt ggagaatgtg cattgactat 180
cagaagctga atgatgccac ccggaaggac cattatccac tccctttcat ggaccaaagt 240
cttgaaagac ttgccgggca atcttattat tgttttctgg atggatattc tggttataat 300
cagattgatg tagatcccaa ggatcaagag aagactgctt tcacctaccc ttttggtgta 360
ttgcctatc ggcgcgatgcc ctttggtttg tgcaatgccc cagctacatt tcagaggtgt 420
atgatgacta ttttttctga tatggtggaa aatgaattg aagttttcat ggacgatttc 480
tctatttttg ggccatcttt tgaagggtgc ttatcaaata ttgaaagagt attaaagaga 540
cgtgaagagt ccaaactagt tctcaattgg gagaaatgcc atttcatggt tcaagaagga 600

atagtgtggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg 660
 taatagagaa actacctcct cccatgaatg tcaagggaat aagaagcttc ctaggacatg 720
 cagggttcta caagcgattc atcaaagatt tcacaaaggt t 761

<210> 151
 <211> 254
 <212> PRT
 <213> Glycine max

<400> 151

Val	Arg	Lys	Glu	Val	Phe	Lys	Leu	Leu	Glu	Ala	Gly	Leu	Ile	Tyr	Pro
1				5					10					15	
Ile	Ser	Asp	Ser	Ala	Trp	Val	Ser	Pro	Val	Gln	Val	Val	Pro	Lys	Lys
			20					25					30		
Glu	Gly	Lys	Thr	Val	Ile	Lys	Asp	Glu	Lys	Asp	Glu	Leu	Ile	Ser	Thr
		35					40					45			
Arg	Thr	Ile	Thr	Gly	Trp	Arg	Met	Cys	Ile	Asp	Tyr	Gln	Lys	Leu	Asn
	50					55					60				
Asp	Ala	Thr	Arg	Lys	Asp	His	Tyr	Pro	Leu	Pro	Phe	Met	Asp	Gln	Met
65					70					75					80
Leu	Glu	Arg	Leu	Ala	Gly	Gln	Ser	Tyr	Tyr	Cys	Phe	Leu	Asp	Gly	Tyr
			85						90					95	
Ser	Gly	Tyr	Asn	Gln	Ile	Asp	Val	Asp	Pro	Lys	Asp	Gln	Glu	Lys	Thr
			100					105					110		
Ala	Phe	Thr	Tyr	Pro	Phe	Gly	Val	Phe	Ala	Tyr	Arg	Arg	Met	Pro	Phe
		115					120					125			
Gly	Leu	Cys	Asn	Ala	Pro	Ala	Thr	Phe	Gln	Arg	Cys	Met	Met	Thr	Ile
	130					135					140				
Phe	Ser	Asp	Met	Val	Glu	Lys	Glx	Ile	Glu	Val	Phe	Met	Asp	Asp	Phe
145					150					155				160	
Ser	Ile	Phe	Gly	Pro	Ser	Phe	Glu	Gly	Cys	Leu	Ser	Asn	Leu	Glu	Arg
				165					170					175	
Val	Leu	Lys	Arg	Arg	Glu	Glu	Ser	Lys	Leu	Val	Leu	Asn	Trp	Glu	Lys
			180					185					190		
Cys	His	Phe	Met	Val	Gln	Glu	Gly	Ile	Val	Leu	Gly	His	Lys	Ile	Ser

195	200	205
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys		
210	215	220
Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His		
225	230	235 240
Ala Gly Phe Tyr Lys Arg Phe Ile Lys Asp Phe Thr Lys Val		
245	250	

<210> 152
 <211> 762
 <212> DNA
 <213> Glycine max

<400> 152

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tcctgggtta gtccggttca agttgttcca aaaaaaggag ggatgacagt ggtaaaaaat 120
gatagaaatg agctaattcc tacaagaaga gtcaccagat ggagaatgtg tattgattat 180
aggaagctca atgaagccac aagaaaagac cattacccac ttcccttcat ggatcaaatg 240
cttaagagac ttgcaaggca atccttctac cgtttcttgg acggatactc aggttacaat 300
cagattgcag tggatcctca ggatcaagaa aaaacagctt ttacatgtcc tttcagtgtt 360
tttgcttate gcgcgatgcc gttcggttta tgtaatgcct ctactacttt tcagagatgt 420
atgatggcaa tttttgatga catggtagag aaatgtattg aagtctttat ggatgatttt 480
tcgttctttg gtgcattctt tggaaattgc ttagcaaatt tagagaaagt gttacaacgt 540
tgtgaaaaat ctaatttggg gcttaactgg gaaaaatgtc actttatggg acaagaagg 600
attgtgctag gacacaaaat ctctaaaaga ggaattgagg tggttaaaga aaaactagat 660
gttattgata aacttccacc ccagttaat gtaaaaggca tacacagttt tttgggtcat 720
gttggaattt atcggcgatt cataaaggac ttcaccaaag tt 762
  
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<210> 153
 <211> 254
 <212> PRT
 <213> Glycine max

<400> 153

Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro
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Ile Ser Asp Ser Ser Trp Val Ser Pro Val Gln Val Val Pro Lys Lys
20 25 30
Gly Gly Met Thr Val Val Lys Asn Asp Arg Asn Glu Leu Ile Pro Thr
35 40 45

Arg Arg Val Thr Arg Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60

Glu Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met
 65 70 75 80

Leu Lys Arg Leu Ala Arg Gln Ser Phe Tyr Arg Phe Leu Asp Gly Tyr
 85 90 95

Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Gln Asp Gln Glu Lys Thr
 100 105 110

Ala Phe Thr Cys Pro Phe Ser Val Phe Ala Tyr Arg Arg Met Pro Phe
 115 120 125

Gly Leu Cys Asn Ala Ser Thr Thr Phe Gln Arg Cys Met Met Ala Ile
 130 135 140

Phe Asp Asp Met Val Glu Lys Cys Ile Glu Val Phe Met Asp Asp Phe
 145 150 155 160

Ser Phe Phe Gly Ala Ser Phe Gly Asn Cys Leu Ala Asn Leu Glu Lys
 165 170 175

Val Leu Gln Arg Cys Glu Lys Ser Asn Leu Val Leu Asn Trp Glu Lys
 180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
 195 200 205

Lys Arg Gly Ile Glu Val Val Lys Glu Lys Leu Asp Val Ile Asp Lys
 210 215 220

Leu Pro Pro Pro Val Asn Val Lys Gly Ile His Ser Phe Leu Gly His
 225 230 235 240

Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 154

<211> 761

<212> DNA

<213> Glycine max

<400> 154

gtgcgtaaag aagttttgaa gctgctagaa gcagacctta tttatcccat ttcggatagt 60
 acatgggtta gccctgtgca agttgtcccc gagaaaggag gtatgacagt cattaagaat 120

gataaagatg agttgatatc cacaaggact gtcaccgggt gagaatgtgc attgactatc 180
ggaagctgaa tgatgccacc cagaaggacc attattcact ccctttcatg gaccagatgc 240
ttgaaagact tgccggacaa tcctattatt gttttctgaa tggatactct ggctataatc 300
agattgtggg agatcccaaa gatcaggaga aaactgcttt cacctgcctt tttgggtgat 360
ttgcatacaa gcgtatgcat tttggcttgt gtaatgctcc aactacgtgt cagagggtga 420
tgatgactat tttttctggg atcgtggaaa aatgcattga acttttcatg gacgatttct 480
ctatTTTTTgg gccatctttt gaaggctact tatcaaacct tgaaagagta ttacagagat 540
gtgaagagtc taatctagtt ctcaattggg agaaatgcca tttcatgggt caagaaggaa 600
tagtgctggg gcataaaatt tcagtaagag ggatagaggt ggacaaggca aagattgatg 660
taattgagaa actacctcct cccatgattg tcaagggaat aagaagcctc ctaggacatg 720
tagggttcta caggcgattc atcaaagact tcacaaaggt t 761

<210> 155

<211> 254

<212> PRT

<213> Glycine max

<400> 155

Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Asp Leu Ile Tyr Pro
1 5 10 15

Ile Ser Asp Ser Thr Trp Val Ser Pro Val Gln Val Val Pro Glu Lys
20 25 30

Gly Gly Met Thr Val Ile Lys Asn Asp Lys Asp Glu Leu Ile Ser Thr
35 40 45

Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
50 55 60

Asp Ala Thr Gln Lys Asp His Tyr Ser Leu Pro Phe Met Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ala Gly Gln Ser Tyr Tyr Cys Phe Leu Asn Gly Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Val Val Asp Pro Lys Asp Gln Glu Lys Thr
100 105 110

Ala Phe Thr Cys Leu Phe Gly Val Phe Ala Tyr Lys Arg Met His Phe
115 120 125

Gly Leu Cys Asn Ala Pro Thr Thr Cys Gln Arg Cys Met Met Thr Ile
130 135 140

Phe Ser Gly Ile Val Glu Lys Cys Ile Glu Leu Phe Met Asp Asp Phe
145 150 155 160

Ser Ile Phe Gly Pro Ser Phe Glu Gly Tyr Leu Ser Asn Leu Glu Arg
165 170 175

Val Leu Gln Arg Cys Glu Glu Ser Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Met Ile Val Lys Gly Ile Arg Ser Leu Leu Gly His
225 230 235 240

Val Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 156
<211> 762
<212> DNA
<213> Glycine max

<400> 156
gtgCGtaagg aggttttttaa gttgctggaa gcaggtctta tttatcccat ttcggatagt 60
gcatgggtta gccctgtgca ggttgtcccc aagaaagaag gtaagacagt cattaaggat 120
gaaaaagatg agttgatatc cacaaggact atcaccgggt ggagaatgtg cattgactat 180
cagaagctga atgatgccac ccggaaggac cattatccac tccctttcat ggaccaaagt 240
cttgaaagac ttgccgggca atcttattat tgttttctgg atggatattc tggttataat 300
cagattgatg tagatcccaa ggatcaagag aagactgctt tcacctacc ttttggtgta 360
ttcgccatc gccgcatgcc ctttggtttg tgcaatgcc cagctacatt tcagagggtg 420
atgatgacta ttttttctga tatggtggaa aaatgaattg aagttttcat ggacgatgtc 480
tctatttttg ggccatcttt tgaagggtgc ttatcaaatc ttgaaagagt attaaagaga 540
cgtgaagagt ccaaactagt tctcaattgg gagaaatgcc atttcatggt tcaagaagga 600
atagtgttgg ggcataaaat ttcagtaaga gggatagagg tggacaaggc aaagattgat 660
gtaatagaga aactacctcc tcccatgaat gtcaaggga taagaagctt cctaggacat 720
gcagggttct acaagcgatt catcaaagac ttctcaaaag tt 762

<210> 157
<211> 254
<212> PRT
<213> Glycine max

<400> 157
Val Arg Lys Glu Val Phe Lys Leu Leu Glu Ala Gly Leu Ile Tyr Pro

1	5	10	15
Ile Ser Asp Ser Ala Trp Val Ser Pro Val Gln Val Val Pro Lys Lys			
20	25	30	
Glu Gly Lys Thr Val Ile Lys Asp Glu Lys Asp Glu Leu Ile Ser Thr			
35	40	45	
Arg Thr Ile Thr Gly Trp Arg Met Cys Ile Asp Tyr Gln Lys Leu Asn			
50	55	60	
Asp Ala Thr Arg Lys Asp His Tyr Pro Leu Pro Phe Met Asp Gln Met			
65	70	75	80
Leu Glu Arg Leu Ala Gly Gln Ser Tyr Tyr Cys Phe Leu Asp Gly Tyr			
85	90	95	
Ser Gly Tyr Asn Gln Ile Asp Val Asp Pro Lys Asp Gln Glu Lys Thr			
100	105	110	
Ala Phe Thr Tyr Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe			
115	120	125	
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Met Thr Ile			
130	135	140	
Phe Ser Asp Met Val Glu Lys Glx Ile Glu Val Phe Met Asp Asp Val			
145	150	155	160
Ser Ile Phe Gly Pro Ser Phe Glu Gly Cys Leu Ser Asn Leu Glu Arg			
165	170	175	
Val Leu Lys Arg Arg Glu Glu Ser Lys Leu Val Leu Asn Trp Glu Lys			
180	185	190	
Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser			
195	200	205	
Val Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys			
210	215	220	
Leu Pro Pro Pro Met Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His			
225	230	235	240
Ala Gly Phe Tyr Lys Arg Phe Ile Lys Asp Phe Ser Lys Val			
245	250		

<210> 158
 <211> 761
 <212> DNA
 <213> Glycine max

<400> 158
 gtgcggaagg aggttcttaa gctcctggaa gcagggctca tctatcttat ctcagatagt 60
 gttgggtgag tccagtgcac gtgggtccca agaaggggtg gaagactgtg gtgagaaatg 120
 agaaaaatga cctcattcta acccgaactg tcacaggatg gagaatgtgc atagattatc 180
 ggaagttgaa tgatgccatc aagaaggatc acttcctctc accattcata gatcagatgc 240
 ttgagagggt agcaagccag tctttctatt atttcttgga tgaatattct agatacaatc 300
 agattgctat acatcccaag gaccaagaga agattgcatt tacatgccca tttgggtgtct 360
 ttgcctatag aaggatgccca tttgaactat gcaatgctcc agctaccttt tagaggcata 420
 tgctagccat attcgtaac atgggtggaga aatgcacga agtggtcata gatgattttt 480
 cgggtgtttg tccatccttt gtttgttgtt tgaccaattt agagctagtg ttgaagtact 540
 gtgaggagac aaatttagta ttgaattggg agaaatgtca tttcatgggc caagaaggaa 600
 ttatgttggg gcataaaatt tttgctagag gtattgaggt ggacaaggcc aaaattgatg 660
 ttattgaaaa gctgcctcca ccagtcaatg taaaaggcat caggagtttt cttggacaca 720
 ctggtttctt caggcgtttc atcaaggact tcacaaaagt t 761

<210> 159
 <211> 254
 <212> PRT
 <213> Glycine max

<400> 159
 Val Arg Lys Glu Val Leu Lys Leu Leu Glu Ala Gly Leu Ile Tyr Leu
 1 5 10 15
 Ile Ser Asp Ser Ala Trp Val Ser Pro Val His Val Val Pro Lys Lys
 20 25 30
 Gly Gly Lys Thr Val Val Arg Asn Glu Lys Asn Asp Leu Ile Leu Thr
 35 40 45
 Arg Thr Val Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Lys Leu Asn
 50 55 60
 Asp Ala Ile Lys Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
 65 70 75 80
 Leu Glu Arg Leu Ala Ser Gln Ser Phe Tyr Tyr Phe Leu Asp Glu Tyr
 85 90 95
 Ser Arg Tyr Asn Gln Ile Ala Ile His Pro Lys Asp Gln Glu Lys Ile
 100 105 110

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125

Glu Leu Cys Asn Ala Pro Ala Thr Phe Glx Arg His Met Leu Ala Ile
130 135 140

Phe Ala Asn Met Val Glu Lys Cys Ile Glu Val Phe Ile Asp Asp Phe
145 150 155 160

Ser Val Phe Gly Pro Ser Phe Val Cys Cys Leu Thr Asn Leu Glu Leu
165 170 175

Val Leu Lys Tyr Cys Glu Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Met Leu Gly His Lys Ile Phe
195 200 205

Ala Arg Gly Ile Glu Val Asp Lys Ala Lys Ile Asp Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Thr Gly Phe Phe Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250

<210> 160

<211> 762

<212> DNA

<213> Pisum sativum

<400> 160

gtgcgcaagg aagtactcaa gttgtagat tcgggaatga tttaccccat ttctgacagc 60
tcgtgggtaa gtccagtga cgtggtacca aagaaaggag gaacctcagt aattttaaat 120
gaaaagaatg aactgatccc aactcgcaca gtgacagggt ggcgagtatg catcgatcac 180
agaagactga acacagcaac aagaaaggat ctttttctc tcccttttat tgatcaaattg 240
ttagaaagac ttgcagggtca tgagtattat tgctttctgg atggatattc gggatacaat 300
caaattgttg tagccccgga agatcaggaa aaaactgcat ttacatgtcc ttatggtatt 360
ttcgtttaca gacggatgcc atttgggcta tgcaatgccc cagctacttt tcagagggtgt 420
atgacatcta tattctccga catgcttgaa aagtatatga aggtgtttat ggatgatttc 480
tctgtgtttg gttcttcttt tgataattgt ttagctaact tgtctcttgt tttgcaaaga 540
tgtcaggaaa ctaaccttgt tctcaattgg gagaaatgtc atttcatggg gcaggaagga 600
attgtgctag gacacaaaat ttcccacaaa ggaattgaag tggacaaagc caaagtggag 660
gttatagcta acctcccacc tccggtgaat gaaaaaggga taaggagttt tttgggtcat 720
gcagggttttt atcgcagggt catcaaagac ttcacaaagg tt 762

<210> 161

<211> 254

<212> PRT

<213> Pisum sativum

<400> 161

Val Arg Lys Glu Val Leu Lys Leu Leu Asp Ser Gly Met Ile Tyr Pro
1 5 10 15

Ile Ser Asp Ser Ser Trp Val Ser Pro Val His Val Val Pro Lys Lys
20 25 30

Gly Gly Thr Ser Val Ile Leu Asn Glu Lys Asn Glu Leu Ile Pro Thr
35 40 45

Arg Thr Val Thr Gly Trp Arg Val Cys Ile Asp His Arg Arg Leu Asn
50 55 60

Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Ile Asp Gln Met
65 70 75 80

Leu Glu Arg Leu Ala Gly His Glu Tyr Tyr Cys Phe Leu Asp Gly Tyr
85 90 95

Ser Gly Tyr Asn Gln Ile Val Val Ala Pro Glu Asp Gln Glu Lys Thr
100 105 110

Ala Phe Thr Cys Pro Tyr Gly Ile Phe Ala Tyr Arg Arg Met Pro Phe
115 120 125

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Met Thr Ser Ile
130 135 140

Phe Ser Asp Met Leu Glu Lys Tyr Met Lys Val Phe Met Asp Asp Phe
145 150 155 160

Ser Val Phe Gly Ser Ser Phe Asp Asn Cys Leu Ala Asn Leu Ser Leu
165 170 175

Val Leu Gln Arg Cys Gln Glu Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Gln Glu Gly Ile Val Leu Gly His Lys Ile Ser
195 200 205

His Lys Gly Ile Glu Val Asp Lys Ala Lys Val Glu Val Ile Ala Asn
210 215 220

Leu Pro Pro Pro Val Asn Glu Lys Gly Ile Arg Ser Phe Leu Gly His
 225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
 245 250

<210> 162
 <211> 762
 <212> DNA
 <213> Pisum sativum

<400> 162
 gtgcgtaagg aggtctttaa actattggat gcgggaatga tttacccgat ctccgatatg 60
 ccgtgggtta gtcccgtagc cgtgggtccg aagaaggggtg gaatgaccgt aatccgtaat 120
 gacaaagacg aattgatccc gactaaagtt gcaacggggt ggagaatatg tatagattat 180
 agacagttga ataccgtagc tcgaaaggac cattttccac tcccatttat ggatcaaata 240
 cttgaaagac tatcgggcca acaatactat tgtttcttgg acgggtactc cgggtacaac 300
 caaattgcgg ttgacccggt tgatcatgag aagacggctt tcacgtgtcc gtttggagtg 360
 ttgcgcataca gaaaaatgcc ctttgggctg tgcaatgcac cggcgacttt ccaacgatgc 420
 gtccatagcca tttttgccga tctaataagag aaaacaatgg acgtcttcat ggatgacttc 480
 tcggtatttg gtgggacggt tagtctatgc ttggcaaat tgaagacggt gttggaaagg 540
 tgtgtgaaga ccaatttggt gctaaattgg gaaaagtgtc acttcatggt gaccgagggg 600
 atcgtgctag gccacaaagt ctctaaaagg gggcttgaag tggatagagc taagggtgaa 660
 gtaattgaaa aattaccccc tccggtgaat gtgaaaggca tccgtagctt tttggggcac 720
 gcgggggttt accggcgctt cattaagac ttctcaaaag tt 762

<210> 163
 <211> 254
 <212> PRT
 <213> Pisum sativum

<400> 163
 Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Met Ile Tyr Pro
 1 5 10 15
 Ile Ser Asp Ser Pro Trp Val Ser Pro Val His Val Val Pro Lys Lys
 20 25 30
 Gly Gly Met Thr Val Ile Arg Asn Asp Lys Asp Glu Leu Ile Pro Thr
 35 40 45
 Lys Val Ala Thr Gly Trp Arg Ile Cys Ile Asp Tyr Arg Gln Leu Asn
 50 55 60
 Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met

65		70		75		80
Leu Glu Arg Leu Ser Gly Gln Gln Tyr Tyr Cys Phe Leu Asp Gly Tyr						
	85		90		95	
Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Val Asp His Glu Lys Thr						
	100		105		110	
Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Lys Met Pro Phe						
	115		120		125	
Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Leu Ala Ile						
	130		135		140	
Phe Ala Asp Leu Ile Glu Lys Thr Met Asp Val Phe Met Asp Asp Phe						
145		150		155		160
Ser Val Phe Gly Gly Thr Phe Ser Leu Cys Leu Ala Asn Leu Lys Thr						
	165		170		175	
Val Leu Glu Arg Cys Val Lys Thr Asn Leu Val Leu Asn Trp Glu Lys						
	180		185		190	
Cys His Phe Met Val Thr Glu Gly Ile Val Leu Gly His Lys Val Ser						
	195		200		205	
Lys Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys						
	210		215		220	
Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His						
225		230		235		240
Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Ser Lys Val						
	245		250			

<210> 164

<211> 762

<212> DNA

<213> Pisum sativum

<400> 164

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gtgcggaagg aggtctttaa attgttggat gcgggggatga tttacccgat ctcgatagtg 60
ccatgggtta gtcctgtgca cgttgttccg aagaaggggg ggattaccgt aatccggaat 120
gacaaggatg aattgatccc cactaaagtt gaaacggggg ggagaatgtg tattgattat 180
aggcggttga ataccgcgac tcgaaaagac cattttccac tcccatttat ggatcaaata 240
ctcgaaagac tatcgggcca acaatattat tgttttttgg acggctactc cgggtacaac 300
caaattgcgg ttgaccgcgg cgatcatgag aagacggctt tcacatgtcc gtttggagtg 360

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ttcgcataacc gaaaaatgcc ctttgggctg tgcaatgcac cggcgacctt ccaacgatgt 420
gtccaagcca tttttgtcga tctgatagag aaaacaatgg aagtcttcat ggatgacttc 480
tcggtatttg gtgggtcttt tagtctatgc ttggcgaact tgaaaacggg gttggagaga 540
tgtgtgaaga ccaatttggg gcttaattgg gagaagtgtc acttcatggg gaccgagggg 600
atcgtgctag gccacaaagt ctctagaagg gggcttgaag tggatagagc taaggttgaa 660
gtgatagaaa aattacctcc tccggtgaat gtgaaggga tccgaagctt tttggggcac 720
gccgggttct accggcgctt cattaaagat ttcacaaagg tt 762

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<210> 165

<211> 254

<212> PRT

<213> Pisum sativum

<400> 165

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Val Arg Lys Glu Val Phe Lys Leu Leu Asp Ala Gly Met Ile Tyr Pro
  1              5              10              15

```

```

Ile Ser Asp Ser Pro Trp Val Ser Pro Val His Val Val Pro Lys Lys
          20              25              30

```

```

Gly Gly Ile Thr Val Ile Arg Asn Asp Lys Asp Glu Leu Ile Pro Thr
      35              40              45

```

```

Lys Val Glu Thr Gly Trp Arg Met Cys Ile Asp Tyr Arg Arg Leu Asn
      50              55              60

```

```

Thr Ala Thr Arg Lys Asp His Phe Pro Leu Pro Phe Met Asp Gln Met
      65              70              75              80

```

```

Leu Glu Arg Leu Ser Gly Gln Gln Tyr Tyr Cys Phe Leu Asp Gly Tyr
          85              90              95

```

```

Ser Gly Tyr Asn Gln Ile Ala Val Asp Pro Ala Asp His Glu Lys Thr
      100              105              110

```

```

Ala Phe Thr Cys Pro Phe Gly Val Phe Ala Tyr Arg Lys Met Pro Phe
      115              120              125

```

```

Gly Leu Cys Asn Ala Pro Ala Thr Phe Gln Arg Cys Val Gln Ala Ile
      130              135              140

```

```

Phe Val Asp Leu Ile Glu Lys Thr Met Glu Val Phe Met Asp Asp Phe
      145              150              155              160

```

```

Ser Val Phe Gly Gly Ser Phe Ser Leu Cys Leu Ala Asn Leu Lys Thr
          165              170              175

```

Val Leu Glu Arg Cys Val Lys Thr Asn Leu Val Leu Asn Trp Glu Lys
180 185 190

Cys His Phe Met Val Thr Glu Gly Ile Val Leu Gly His Lys Val Ser
195 200 205

Arg Arg Gly Leu Glu Val Asp Arg Ala Lys Val Glu Val Ile Glu Lys
210 215 220

Leu Pro Pro Pro Val Asn Val Lys Gly Ile Arg Ser Phe Leu Gly His
225 230 235 240

Ala Gly Phe Tyr Arg Arg Phe Ile Lys Asp Phe Thr Lys Val
245 250